NORTH-SOUTH DIALOGUE

Declaration

New International Economic Order

THE SIXTH special session of the General Assembly of the United Nations adopted on May 1, 1974 two resolutions laying down the basic principles for a New International Economic Order. The first is the Declaration and the second is the Programme of Action which includes measures to assist developing countries most affected by the prevailing economic crisis. The following is the Declaration of New Economic Order :—

We, the Members of the United Nations

Having convened a special session of the General Assembly to study for the first time the problems of raw materials and development, devoted to the consideration of the most important economic problems facing the world community,

Bearing in mind the spirit, purposes and principles of the Charter of the United Nations to promote the economic advancement and social progress of all peoples,

Solemnly proclaim our united determination to work urgently for

The establishment of a New International Economic Order

based on equity, sovereign equality, interdependence, common interest and cooperation among all States, irrespective of their economic and social systems which shall correct inequalities and redress existing injustices, make it possible to eliminate the widening gap between the developed and the developing countries and ensure steadily accelerating economic and social development and peace and justice for present and future generations, and, to that end, declare :

1. The greatest and most significant achievement during the last decades has been the independence from colonial and alien domination of a large number of peoples and nations which has enabled them to become members of the community of free peoples. Technological progress has also been made in all spheres of economic activities in the last three decades, thus providing a solid potential for improving the well-being of all peoples. However, the remaining vestiges of alien and colonial domination, foreign occupation, racial discrimniation, apartheid and neocolonialism in all its forms continue to be among the greatest obstacles to the full emancipation and progress of the developing countries and all the peoples involved. The benefits of technological progress are not shared equitably by all members of the international community. The developing countries, which constitute 70 per cent of the world's population, account for only 30 per cent of the world's income. It has proved impossible to achieve an even and balanced development of the international community under the existing international order. The gap between the developed and the developing countries continues to widen in a system which has established at a time when most of the developing countries did not even exist as independent States and which perpetuates inequality.

2. The present international economic order is in direct conflict with current developments in international political and economic relations. Since 1970 the world economy has experienced a series of grave crises which have had severe repercussions, especially on the developing countries because of their generally greater vulnerability to external economic impulses. The developing world has become a powerful factor that makes its influence felt in all fields of international activity. These irreversible changes in the relationship of forces in the world necessitate the active, full and equal participation of the developing countries in the formulation and application of all decisions that concern the international community.

3. All these changes have thrust into prominence the reality of interdependence of all the members of the world community. Current events have brought into sharp focus the realization that the interests of the developed countries and those of the developing countries can no longer be isolated from each other, that there is close inter-relationship between the prosperity of the developed countries, and the growth and development of the developing countries, and that the prosperity of the international community as a whole depends upon the prosperity of its constituent parts. International cooperation for development is the shared goal and common duty of all countries. Thus the political, economic and social well-being of present and future generations depends more than ever on cooperation between all members of the international community on the basis of sovereign equality and the removal of the disequilibrium that exists between them.

4. The new international economic order should be founded on full respect for the following principles :—

(a) Sovereign equality of States, self-determination of all peoples, inadmissibility of the acquisition of territories by force, territorial integrity and non-interference in the internal affairs of other States;

(b) The broadest cooperation of all the States members of the international community, based on equity, whereby the prevailing disparities in the world may be banished and prosperity secured for all;

(c) Full and effective participation on the basis of equality of all countries in the solving of world economic problems in the common interest of all countries, bearing in mind the necessity to ensure the accelerated development of all the developing countries, while devoting particular attention to the adoption of special measures in favour of the least developed, land-locked and island developing countries as well as those developing countries most seriously affected by economic crises and natural calamities, without

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Chief Editor : P. C. Roy

Editor : Sethu Rao. S

Assistant Editors: P. Perumal

R. R. Rao

Sub-Editor : Vijay Verma

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GAUHATI : R. N. Bez Baruah
Photographic Officer : K. S. Nagaraj
Artist : P.K Sen Gupta
Advt. Manager. T. R. Maheshwari

Editorial Office : Yojana Bhavan, Parliament Street, New Delhi-110001. Telegraphic Address : Yojana, New Delhi. Telephones : 383655, 387910, 385481 (extensions 402 and 373). Circulation : Business Manager, Publications Division, Patiala House, New Delhi-110001.

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Editorial

The Emerging New Order

U.N. charter provides in its Articles 54 and 55 the base for the creation of a superstructure for economic cooperation within the world body itself. Despite continuing efforts by the developing countries to promote better standards of life for the vast majority of their people living in endless poverty, no effective system of international economic cooperation could be built up during the two Decades of Development beginning from the sixties. The world continues to be divided into areas of poverty and riches where prosperity could not be achieved for all. The adoption of the declaration on the establishment of a New International Economic Order (NIEO) by the UN General Assembly in May 1974 rekindled a new hope for mankind, evoking at the same time considerable public debate about its scope and capability.

If national sovereignty has become the keynote of the world political order, it is only logical to assume that NIEO would ensure the basic and inalienable economic right of the people living in different countries of the world. It has been estimated that there are at least 700 million people in the world today who are lacking basic requirements for a decent life, adequate food, minimal clothing and shelter, access to safe water, decent sanitation, basic health facilities and primary education for children.

Really speaking, there is no dispute about the essentially undemocratic nature of the present economic order in which the developing countries are seeking desperately without much success a larger share of the world's resources owned by the developed countries. No unanimity however exists about the potential gains to be achieved under the new dispensation. The demand for the NIEO is itself looked upon as an expression of frustration of the underdeveloped and developing. Most of the propositions in the new order are reformulations of the old proposals. The call for NIEO emnates from the deprived although it is reinforced by the political force behind the demand. The OPEC countries' success in raising oil prices had given the confidence in "commodity power", a new found capacity for independent action.

The diversity of political and economic conditions within the contending groups in the world body would certainly continue as in the past to hamper the quest for general solution to suit all the diverse requirements. Yet the fact remains that no group activity in constructive sphere is possible unless it is within the framework of the international community. In this age of space communication the nations have become interdependent. Such inter-dependence, not over-dependence, is conducive to economic development within a global system. The current Noth-South trade flows and a common concern over energy demonstrate unmistakably a new global inter-dependence in international economic relationship. It is also undeniable that the Third World's sustained buying power has significantly mitigated the effects of recession in the North.

The political wing of the developing countries, which has found expression in the "group of 77" is a significant factor in the establishment of the new world order. But this political factor must be translated into economic realities to become real influence in the shaping of international relations, NIEO has all the potentialties to remove the impendiments to industrialisation and modernisation of the developing countries which need market for their products. Rapid expansion of trade exchanges between North and South on terms of equality and mutual benefit will be an essential ingredient in the new order where cooperation would be the watch-word for the conduct of affairs. Our country has played over the years a significant role in creating a climate of harmony in the midst of conflicting national interests in the UN It will not be idle to expect the country at the spearhead of the movement for making NIEO not a passing fashion but a living reality. □

Yojana, 26 January, 1980

"Many new nations, having won political independence, find themselves still bound by economic dependency. For a long time it was thought that the solution to this problem was aid and assistance. It is increasingly clear, however, that a New International Economic Order is essential if the relations between rich and poor nations are to be transformed into a mutually beneficial partnership. Otherwise, the existing gap between these groups of nations will increasingly represent a potential threat to international peace and security.

Moreover, the dependence of the developing world upon the developed is changing-indeed in certain cases has been reversed. Many developed nations are also finding themselves in serious economic difficulties. The international system of economic and trade relations which was devised 3 years ago is now manifestly inadequate for the needs of the world community as a whole. The charge against that order in the past was that it worked well for the affluent and against the poor. It cannot now even be said that it works well for the affluent. This is an additional incentive for evolving a new economic order...........

"We must work with determination and understanding to resolve constructively what I regard as the major international issue for the future—what is sometimes called the "North-South relationship" between major industrialised nations and the developing world......The problems which we face are so large and so complex that people may well often feel helpless and despair of the future. But it is because the problems are so large that we can and must meet them with a co-operative international response. The Unifed Nations, as the only global organization, provides a unique forum and unique machinery for that response."

Kurt Waldheim
Secretary General

New International Economic Order and India

Malcolm S Adiseshiah

THE NEW International Economic Order (NIEO) launched by the United Nations in 1975 can be sliced in many different ways for purposes of analysis. In this note the start is the overall aim of NIEO under which the developing countries would, through appropriate institutional reforms have a determining voice in the functioning of the international economic system and a larger share of the world's income and wealth in place of the present disorder which has resulted from the domination of the industrialised countries for over three Centures, and the consequent appropriation of a disproportionately large share of world resource and wealth. The specific challenge to the present order is in regard to six main components (a) the commodity programme (b) trade (c) investment (d) aid and indebtedness (c) world monetary reform and (f) technology transfers.

Malcolm S. Adiseshiah is Chairman, Madras Institute of Development Studies & formerly Deputy Director-General, UNESCO

The problem under the commodity programme is to stock pile some 12 major commodities in world trade in order to attain a degree of stabilisation of their prices and the incomes of the primary producers in the developing countries. In regard to trade, the developing countries started with the principles of preferential access and non-reciprocity as their major plank and now have moved to removal of non-tariff barriers and improvement of terms and trade issues as their major platform. The investment focus was not only in relation to capital flows but also and even more the aim at a 25 per cent share of world industry production by the end of the century. The aid target and indebtedness problems refer not only to the non-fulfilment of accepted targets but to the actual decline in the quantum and quality of aid trasfers and the urgency for an overall settlement of international indebtedness. On world monetary reform, there is the question of the weight of the developing countries' voice in regard to the system of international liquidity and the SDR link. Finally the live question of technology transfers raises questions of the

costs of the investment activities of multi-national corporations, the transfer and adaptation of technologies and home grown development of technology, the movement of specialists and location of "the poles of attraction" for scientists and specialists.

India and NIEO

India's interest in NIEO from the point of view of its national economic interest is more in terms of the overall objective referred to above rather than specifically in any of its six components. It has interest of course in each of the components, but they are of varying intensity and do not add up to a coherent policy. India's interest in them is more an outcome of its leadership role in the group of 77, the trade union of the poor as it is called.

India's direct interest in the commodity stocking programme—of cocoa, coffee, copper, cotton, jute, rubber, sisal, sugar, tea and tin,—is limited to five of them—coffee, cotton, jute, sugar and tea. It has been active in promoting international agreements within the framework of UNCTAD and FAO in jute and tea, and has helped in getting the compromise agreement for the $ 750 million International Fund to stabilise commodity prices It should be noted that in none of the commodities listed above has a producer cartel along lines of OPEC been possible. The draft agreements being endlessly discussed for these and other commodities face the problem of high elasticities of substitution—if the price of coffee rises there is a switch over to tea, while jute, cotton, and rubber face the competition from synthetics, and also as in the case of crude oil, the industrialised countries have developed an increasing inventory policy in these commodities. Further, despite its economic legitimacy derived from Keynes who in addition to his proposal for the setting up of the World Bank and the Fund suggested a third institution, commod control for commodity price stabilisation, the commodity stocking programme has become a token effort—the climb down from $ 3 billion Fund to $ 750 million (and further actuals to $ 400 million), and the disagreement over the second window and the articles of incorporation which have yet to be drawn up, being evidence of the tokenism. The developing countries have now shifted from commodity stocks and their financing to the indexation plan as one means of ensuring stable prices for their commodities. The complexity of an international indexation scheme is however a serious obstacle, one that can be understood in light of the national reaction to the proposal to use the indexation technique to meet our current hyper inflationary stage.

Trade

In regard to trade, India's national interest and international stance is an ambivalent one. India's share in world exports is 0.45 percent (compared to the US's 14 per cent and Japan's eight per cent) and even among developing countries India's share is less than 3.5 per cent Its share in world imports is little higher at 0 6 per cent (compared to 6.15 and 6 per cent for the US and Japan) India's exports are around 4.4 per cent of its GDP (compared to UK's 16 per cent and Japan's 10 per cent. With this rather marginal stake in foreign trade, which in terms of paying for needed capital and maintenance import are however important, India's national interest in the trade negotiation and discussions have been rather small. Even so India has carried on the struggle for preferential access for the exports of developing countries even though her own performance in taking advantage of GSP is a poor one.

India is the sixth GSP beneficiary in trade with Australia, eleventh with Finland, seventh with EEC, ninth with Hungary, sixth with Norway and Sweden, third with USSR, and first only with Switzerland. Overall whatever benefits GSP was meant to confer on the developing countries have now been more than overtaken by the non-tariff barriers erected by the industrialised countries against the imports from the developing countries. These barriers include standards such as packaging and labelling requirements or food and drug regulations, customs evaluation like ASP, safeguards such as the escape clause restrictions, subsidies and the banning of subsidised imports, and discriminatory purchase by government agencies. The developing countries concentrated the Tokyo Round negotiations around the lowering of these barriers which the industrialised countries have refused to accede to, and hence the Tokyo Round deadlock. This fight for expanding trade is an essential part of NIEO, a struggle in which the developing countries have power, in terms of potential institutionalised disruption.

Investment

The third component, investment flows into developing countries, is important in relation to the total flows particularly to the poorer countries, to the need to compensate the terms of trade losses they suffer, and to its assistance in helping the developing world attain the 25 per cent world industry target. OECD reports that total capital flows to the developing countries in 1977 was around $ 64 billion. The major capital flow receivers as at 1977 are Brazil ($9.1 billion), Indonesia ($5.1 billion), Spain ($4.7 billion), Mexico ($ 4.6 billion), Bermuda ($ 4 billion), Venezuela ($2.9 billion), Panama ($2.3 billion), Argentina ($2.2 billion), within a cumulative total (1960-76) of $76.2 billion.

India's cumulative total of foreign private capital investment stands at $2.5 billion in 1977. Its ranking as an attraction for the flow of private foreign capital is low, which the FERA guidelines further exacerbates. RBI's latest report on the Indianisation of 890 foreign companies refers to the directive it has issued for the dilution of foreign equity to the required 74 per cent, 51 per cent, or 40 per cent, depending upon the nature of activities of the companies, to 356 companies, and the various lags and dilatory tactics that it faces. In addition there are the foreign exchange curbs and bureaucratisation which act as dampers. India's position on this issue is thus a mixed one, of receiving and accommodating private foreign capital under rather clear and nationally agreed guide lines and controls. For the 143 developing countries and territories listed in the OECD report, the capital flows were less than two thirds of losses suffered by them as a result of the deterioration in their terms of trade in that period. As a consequence the 25 per cent of industrialisation goal is still a far off target. But the movement towards that requires not only increasingly adequate capital flows into the developing countries, it also calls for changing the life styles and consumption patterns of the people in the industrialised countries and the elites in the developing countries,

along with a progressive and partial reconversion of many industries. The industrialisation that NIEO envisages is not a linear expansion of the existing industrial structure and pattern which is market oriented and not need based, which relies on the continuing recycling of petro dollars and not on self reliant savings, and which sacrifices long term development (including industrialisation goals) to short term balance of payments pressures.

Aid and Debt

On the aid and indebtedness facet of NIEO, the present situation is a sombre one. Quantitatively the developing countries have facing them a decline in aid flows despite the pledges and rhetoric that have accompanied this aspect of NIEO. According to the OECD 1978 report, ODA increased by $ 1 billion in 1977 over the 1976 level but as a percentage of the DAC members gross national product fell from 0.33 in 1976 to 0.31 in 1977, which meant, allowing for inflation, a decline in the absolute amount. This decline was due mainly to the action of the major industrialised countries, the US official development assistance falling from 0.25 per cent of its GNP to 0.22 per cent between the two years, German ODA falling from 0.31 per cent to 0.27 per cent and Japan stagnant at 0.21 per cent. The smaller DAC countries increased their ODA, Sweden increasing by 25 per cent to 0.99 per cent of its GNP, Netherlands to 0.85 per cent, Norway to 0.82 per cent and Denmark and France by 60 per cent each.

The developing countries feel that the fall in major industrial countries' ODA is linked to the long suspected link of ODA to the cold war. Infact aid—especially from the major industrial countries and to some extent even through consortia—has become an instrument for interference in domestic affairs under two aspects. One is the insistence of the countries giving aid to review the whole national economic system and policies of the developing country, advising on their restructuration and insisting on acceptance of such advice as a condition of the declining marginal aid being offered. The other is the laying down of the so called priority areas on which the aid is to be exclusively concentrated. The United States has legislated to this effect for its development assistance to be concentrated on what is called the 'basic human needs' of the country receiving its aid, which means health, nutrition, family planning and education. A similar emphasis is developing in aid to Rural development.

This distortion of NIEO objectives by current aid trends is opposed by India, whose official position was stated in the United Nations in the following terms :"........the strategy for the Third Development Decade must aim at the establishment of a New International Economic Order, that is, a restructuring of international economic relations. We are, therefore, strongly against any attempt to divert the attention of the international community to alternative approaches to development cooperation such as the basic needs approach. The meeting of basic needs is a part and parcel of the over-all objectives of the plans of the national governments, whose sovereign right it is to identify and determine their development needs. It is, therefore, for the national government to identify such gaps which need to be filled from external resources either through finance or through technological transfers or through the application of appropriate commercial policies.

India is fully committed to the principle elaborated in the International Development Strategy for the Second United Nations Development Decade that the 'primary responsibility for the development of developing countries rests upon themselves, but however greater their own efforts, these will not be sufficient to enable them to achieve the desired development goals as expeditiously as they must unless they are assisted through increased financial resources and more favourable economic and commercial policies on the part of developed countries'. India believes that the relationship between develpd and developing countries should be based on equity, sovereign equality, interpendence common interest and cooperation among all States, irrespective of their economic and social systems for the establishment of the New International Economic Order". Further the quality of aid is also worsening with the continuing of the practice of aid tying (in 1977 $ 10 billion out of $ 16 billion were partially or totally tied), which meant that the developing country receiving the aid had to buy goods and services only from that country at well above internationally ruling prices.

The polluted air of an industrial country is made worse by industrial growth that could have taken place with beneficial effects on the industry's raw materials originate......

On top of this, $ 5.8 billion of ODA in 1977 were loans that had to be repaid. India is a large aid receiver, her net receipt in 1977 from bilateral ODA being $ 481.56 billion from multilateral sources $ 443.68 billion, and from all sources $ 1039.02 million Aid commitments 1975 were at an all time high of $ 3233.90 million, declining in 1976 to $ 1834.44 million. India's aid per capita (because of its population size) is the lowest at $ 2.2, compared to the per capita average of all other countries at $ 9.5 with its share of concessional aid declining over the decade. To some extent this is a reflection of the competition from other countries for the available resources, to some extent it is due to India's self denying stance as in the case of ADB funds, but it is largely due to the fact that aid has strings and India cannot accept those strings and has in place established (a somewhat unrealistic time frame to stop receipt of the net aid. India has stood by the economic principles that the total welfare of developing countries can be increased by allocating a larger share of aid to the poorer countries, and also on the grounds that in general the marginal productivity of aid is higher in countries receiving relatively low levels of aid—and that is the current situation of the developing world.

International indebtedness has increased sharply in the seventies from $ 74 billion in 1970 to $ 244 billion in 1977, with the fastest increase in market loans from $ 12 billion to $ 96 billion in this time period. India has the third largest foreign debt among developing countries at $ 13.6 billion and is 11th in its debt

servicing at $ 0.91 billion in 1977. Within the NIEO frame, the developing countries started their negotiations with a demand for generalised debt relief. Because of the opposition from the industralised countries and the interest of some of the developing countries to safeguard their access to market loans, there is general agreement now that debt relief should be reviewed on a case by case basis. This could be within the spirit of NIEO, provided debt relief is seen as a form of development assistance, and not as a means of keeping the debtor country on a short leash, by the grant of minimum relief, early resumption of debt servicing, and the cost to the creditors of any postponement being matched by additional interest rates levied at commercial rates. The recent record in debt relief, however, represents a satisfactory start. By the end 1978, 11 industrialised countries announced plans to convert $ 6.2 billion loans owed by 45 developing countries into grants. Thus debt relief has been more than the soft loan type, and in relation to the poorer countries has been in the form of development assistance to all developing countries at varying rates of relief, such as the writing off of one or two or three years of interest on all long term debt, with some differentiation between commercial and developmental debts. For countries like the US which are not increasing their aid appropriations in line with the pledged 0.7 per cent of their GNP, debt relief which does not require budget authorisation or appropriations would be one way of increasing the transfer of real resources or providing greater volume of aid without increasing their aid budget.

World Monetary Reform

One of the key issues of NIEO relates to the whole area of world monetary reform, because the issues involved are technical, institutional and developmental The technical issues relate to the break down of the Bretton Woods Systems, and the uneasy regime of floating currencies which is now prevalent and in which the dominant voice is that of industrialised countries, with the developing countries suffering losses. The issues also involve reform of the world monetary institutions, with a greater say for the developing countries, the start of which is seen in the increased IMF quotas for the OPEC countries, the increase in the developing countries quota to 31 per cent, and in the establishment of the IMF committee of 20, that grew out of the closed group of 10. The immediate major debate centres around SDRs linked to development financing. India has an important stake in the issues of world monetary reform, namely, in the institutional arrangements which would result in the monetary system with international liquidity arrangements in which India and the developing countries would have an equitable voice in place of the present non-system, and in the development finance linked SDR. India's insistence on the SDR system so linked to development assistance is not primarily because the link will increase development aid to the economy, but also because it is the one means of restructuring the international economic order, which will result in a more equitable distribution of world income among countries In this connection, the international discussion of the link in the IMF annual meetings and in the committee of 20 distinguishes between an organic link and an inorganic link. The link itself is the arrangement through which newly created assets are injected into the international economy according to a neutral distribution formula—the usual criteria of neutrality being the IMF quota base—which will augment the flow of development finance. The organic link is the SDR allocation arrangement that would follow from a change in the IMF articles on the quotas, which after long discussions and negotiations, has been abandoned in favour of the inorganic link which India has advocated. Under this latter arrangement, SDRs will be allocated under the existing IMF quotas, but under which the industrialised countries will contribute a part of their SDRs allocation to the IDA, which will in effect increase the resources available to the developing countries for development. However, after discussion among themselves in the committee of 25, in the course of which India was out voted, the developing countries have formulated their SDR link position as a kind of half way house between the organic and inorganic link position under which SDR allocations will be distributed according to IMF quotas with a weighing factor applied to the quotas of the developing countries, the least developed 25 countries being given greater weights. (The developing countries were opposed to the Indian inorganic link formula primarily because IDA benefits mainly a few of the developing countries, notably India, whereas their allocation formula will benefit equally all developing countries). Now the time is ripe for India and the developing countries to get this SDR link formula accepted, and the chance of such acceptance is greater, as it can be applied to the new Substitution Account proposal which the industrialised countries, including the US, are beginning to see as a means of offsetting the amortization of reserve centre debts.

Technology Transfers

Alongside of this aspect of NIEO monetary reform as a means of increasing resource flows to and earnings of the developing countries is the equal and increasingly more dominant concern on the international role of technology in the entire process of development. India has been concerned with the fact that parallel to the income, investment and trade gaps between the industrialised and developing countries, and lack of it and more serious, is the technology gap between the two groups of countries. This gap world economy operates on the false assumption that producers in both groups of countries work on the same production function, that the process of technology transfer is simply the diffusion of the existing shelf of techniques and know-how from the industrialised to the poor countries, in which the latter have no role except that of passive recepients, that as a consequence the technology shelf itself is determined solely by the needs of the industrialised countries' markets and as a further result the institutional arrangements for technology generation and diffusion are based on the private property and profit maximisation criteria rather than on any relation to any of the socio-economic goals that the developing countries and their economics have set for themselves. As a consequence technology development and transfers in the present world economy are from the developing countries point of view not transfers but market sales, the markets in which they are sold are imperfect both in their monopolistic dominance and in the non-availability of technical information, and as a consequence the so called technology transfer institutions have been founded and function in the sole interests of the technology owners, who are the multinational firms. The package delivery of capital, technology, management and markets of these firms is their unscrambled principal source of power with which they dominate the

economies (and political relations) of the developing countries. In the NIEO discussions, the efforts of India and the developing countries are aimed at two major control areas to remedy this situation.

The first is to revise the Paris convention under which over 90 per cent of patents are granted by the developing countries to the multinational firms, and over 90 per cent of that 90 per cent technology patents are never used in the countries granting them. Hence the efforts of the developing countries in UNCTAD are now concentrated on the reform of the WIPO convention, involving the purchase of patents based on their development criteria, the marketing off of production sectors where foreign patents will not be granted, and the ensuring of patents for domestic production and for predetermined time periods. Second, India's particular contribution has been to help the group of 77 to draw up a code of conduct on the transfer of technology and to lead in the international discussions and negotiations on the code to the point where there is today unanimous acceptance of the need for a code with disagreement on some part of its content. The major issues of the code now under contention are first the insistence of the industrialised countries that no code should be legally binding and based on national legislation (against the argument that this woud not be administratively feasible, the functioning of the universal copy right convention may be cited), second the principle of submitting disputes to international arbitration if their coming under domestic legal jurisdiction is not acceptable, and third the precise content of restrictive business practices which the code will prohibit.

An African country, forced to buy food from abroad to prevent famine, has little left to spend for the tools that could improve its crops next year......

In the meanwhile, India is assisting the developing countries in screening technology purchases from MNCs and helping in the price bargaining process of the technologies whose supply schedule at the prices attached to them are highly inelastic compared to their low marginal costs. The costs of technology brought by the developing countries in direct costs is 6 to 10 per cent of their fixed capital formation or $ 10-15 billion, and in indirect costs involved in delayed or inadequate transfers, inappropriate choice of technology under high pressure salesmanship for producing goods of low social priority and total foreign control, which add upto $ 30-50 billion a year, which could increase 5-8 times if they do reach the Lima target of 25 per cent industrialisation. In this context, there is leeway for high taxes and rental earnings by the countries in regard to MNCs operating in their countries. An area more amenable for early corrective action is the imperfect technology information available to the developing countries. Here to counter the traditional intra-industralised world monopoly of information diffusion, India with the help of UNCTAD has set up a technology information centre, to store and diffuse information on technologies developed by India and other developing countries (including what is called appropriate technology which is not simply a function of factor endowments as is wrongly emphasised in the literature on the subject but includes a whole host of factors

The net transfer of financial resources from rich to poor countries amounts to about one-thirtieth of the world's annual military expenditure......

such as by products use, use of local inputs small scale techniques, etc.) and to develop referred and joint shipping services, including technology data banks where information on available technologies would be stored, retrieved and diffused. But technology is not simply the knowhow available at any given time for all times : it is constantly growing, changing and developing. This is where the present imbalance of the developing countries spending only 2 per cent of the total world R & D expenditure would have to be corrected by the developing countries (and the industrialised countries), as is the fact constantly referred to by UNESCO that 90 per cent of scientists and technologists in the world today live in the industrialised world. India's and UNESCO's efforts to increase the applied research capacity of the developing countries which is correlated to the volume and quality of their basic research is the immediate path that NIEO has traced, from which the other issues of technology development, diffusion and adaptation would flow.

India's Overall Interest

Such is the wide range of issues that cover India's involvement for the launching of the New International Economic Order. As noted earlier, India's own interest in most of the six components is less decisive than in the overall issue that NIEO represents. The continued poverty and growing income differential between the rich and the poor countries and the marginal role that the latter play in the management of the world economy are the points of attack in which India is interested. The attempts to divide the developing countries into middle level and low level developing countries, into the well to do, poor and poorest countries, into the oil producing and oil consuming countries, into the third world and fourth world are growing and are becoming an effective diversionary tactic, away from the main objective of NIEO towards a more just and egalitarian world, in the absence of which the demand for all the six components of the order and the present disorder flow. For the developing countries today, the demand for a more efficient and equitable system of a resource transfers, for freer access to the markets of the industrialised countries, for a real system of technology development and technology diffusion are common instruments to all of them in the struggle under way for the New International Economic Order. Then Phrases like interdependence and mutually beneficial exchanges including commodity prices with or without indexation, monetary reform, international investment, development assistance and technology shelf purchases would become instruments of international economic progress and international economic and social justice. Then the internal problems of injustice and elitism within the third world countries will not be used as an excuse and apologia for non action, but will be domestic challenges to which the people of the countries will address themselves, as India is attempting to, in demonstrating the indelible link between a new national economic order and the New International Economic Order. ☐

Need For Economic Diplomacy

S. Guhan

THE NEW International Economic Order (NIEO) as is well known, is contained in Resolution 3201 and 3202 of the UN General Assembly dated May 1, 1974 on 'Declaration and Action Programme on the Establishment of a New International Economic Order'.

North and South

The main elements of the 'new order', as articulated in this document, consisted in a call for a set of inter-related policies and performance targets on the part of the international community, specifically the industrialised countries (hereinafter, the North) to promote the self-reliant development of the developing countries (hereinafter, the South). Principally, they included improvement in the quantum and quality of concessional aid; the creation and distribution of international liquidity in conformity with the needs of the developing countries ; action for stablishing and improving export prices of primary commodities and for the diversification of economies heavily dependent on them; increased access to trade in commodities, processed items and other manufactures; assistance for industrialisation and the national companies; and assistance for agricultural production and food self-sufficiency.

In these measures, special attention was to be paid to the least-developed countries, to the poorer oil-importing developed countries (in formal terminology, the Most Seriously Affected or MSA countries) and to economic cooperation among developing countries themselves.

Most importantly, the NIEO was not a list of demands from the South for the "kind consideration" of the North. It was rather an assertion, at a political level, of the South's belief in the necessity and possibility of structural change in the management of international economic relations, as they operate in the main markets in which the South is a "buyer" (such as money and finance, capital goods, and technology) and those in which it is a "seller" (such as primary commodities, manufactures and labour). Essentially, thus, the NIEO is a charter calling for a freer, fuller and a more equal participation for the South in the world economy and in international institutions which mediate or monitor international cooperation.

"Trade Union Tactics"

It is also a premise of developing countries that the process of structural change embodied in the NIEO could be achieved through negotiation in international fora. This premise is based, inter-alia on the perceptions of the South's dominance in world population (more than 50 per cent), in UN membership (about four-fifths), in the export of fuels and energy (76 per cent) and of other primary products (34 per cent). But "negotiation", in the practise of it, has a wide meaning. It need not be confined to economic bargaining for achieving reciprocal gains but could also legitimately include non-consensual resolutions passed by majority voting, pressure through rhetoric and verbal agitation. It is this phenomenon of politicised negotiation that has made some observers comment that in the NIEO the South is attempting "trade union tactics" in international relations.

Undoubtedly, it was the quadrupling of oil prices in 1973 that created the context and the conditions of the NIEO to be put forward and adopted in the United Nations. Since then it has been kept alive, apart from the UN, in the Conference on International Economic Cooperation (1975), in the IV (1976) and V (1978) sessions of the UNCTAD and in various other fora. In referring to these developments, we should not, however, forget that deeper historical forces had been maturing all the time which made the NIEO their natural consequence. The most important of these was the completion of the process of de-colonisation in Africa and Asia and the coming together of developing countries, mostly Afro-Asian, in the non-aligned movement. In both these processes, India had played a major participatory and promotional role under former Prime Minister Nehru's leadership.

This is the background against which we should consider how India can relate to the NIEO. What can it expect from a new international economic order and what role can India play in promoting the new order ?

Within the conglomeration of issues that the NIEO covers—money and finance, commodities, trade, industrialisation investment and technology, food, and energy—individual issues affected different countries to differing extents. Many countries in Africa and Latin America are heavily dependent on the exports of a few primary commodities; to them "comodities" are the key question. The newly industrialising countries of South East Asia and South America are primarily interested in increased opportunities for trade in manufactures and in the removal of barriers to such trade. Several low-income countries are in need of concessional aid but there are many middle-income countries to whom private flows in the form of direct foreign investment and commercial loans are more important. The transfer of technology continues to concern most developing countries but the least developed countries need it particularly; they can not wait or hope to acquire it through commercial channels. Private investment has gone only to a relatively few countries in significant magnitudes but in many other countries as well its presence has been quite visible.

India's Role

In this picture of heterogeneity, India holds a broad middle position. We are not commodity dependent but primary products and minerals still consti-

Guhan was formerly Finance Secretary to Tamilnadu Government and is a Senior Fellow in Madras Institute of Development Studies. He has represented Union and State Governments in many international forums.

terms, India does not get much aid but in absolute terms, we are perhaps the largest recipient of concessional finance. Our exports are only 7 per cent of GNP but exports of manufactures are fast growing and we need world markets, including markets in developing countries, to sustain their dynamics. India is high in the list of industrialised developing countries. Although we have not overly depended on private foreign investment, we still need it in many crucial sectors and we also invest abroad. We certainly need the transfer of technology. In the labour market, we are responsible for considerable brain drain to the West. We have also sent out in recent years a large volume of unskilled and semi-skilled migrants to the Middle East.

Given this web of relationships, the objective situation of India is that she does not have a predominatnt interest in any single NIEO issue but nevertheless has a diversified involvement in the entire range of the NIEO. If met with imaginative economic diplomacy, such a situation, can lead to active participation and numerous initiatives in the NIEO on our part. On the other hand, if policies are timid and inward-looking, it can result in a sense of dissipation and apathy. Unfortunately, the last 5 years since 1974—when the NIEO has elsewhere gained momentum—have not been very conspicuous for the quality of initiative or imagination in our political or bureaucratic leadership in the sphere of international economic policy.

Suggestions

This criticism may appear to be sweeping but one way of concretising it might be to outline some things we could do but (by and large) have not. The list is, of course, only illustrative and any like-minded reader could easily add to it. In this spirit, the following are to be considered :

(1) India must make common cause, with a full sense of participation, with other developing countries on all issues of interest to them, although some of these may not be significant to us. Unless we do this, we can not either count as a full member of the Southern fraternity or obtain reciprocal support from others.

(2) We must, therefore, vigorously advocate all NIEO issues in all available fora. Our representation must be at high political levels and the language of our advocacy reasonably immoderate, without looking too much over the shoulder to relations in other contexts with the North or the East (Recall V K Krishna Menon).

(3) India enjoys a special position as a formation member in the IMF, IBRD and GATT. Most African and Asian developing countries were still colonies when the Bretoon-Woods Institutions and GATT were created. These institutions are critical to the success of the NIEO but they are also the ones which have responded least to the urges of developing countries. Given our position of seniority in these institutions, a major contribution that India can make will be to agitate NIEO considerations in these strong-holds of the old order.

(4) India has much to give to, and gain from, cooperation with other developing countries. We must take a more active role in such cooperation. We can [illegible], we give unilateral trade preferences to the least-developed countries and to our poorer neighbours. India gives aid and technical assistance to a few countries in Asia and Africa. Efforts in this direction should be expanded. We can devote 0.1 per cent of our GNP (equivalent at present to Rs. 80 to 90 crores) annually for solidarity. In extending assistance, we should concentrate on the neediest countries whose requirements match availabilities and skills in India, put aside narrow foreign policy considerations and take a low-profile.

(5) In our relations with other developing countries, we should practise what we preach : freer trade, regulated private investment, liberal aid policies, liberal access to others to technology and training facilities available in India and so on.

(6) We should be willing and eager to learn from the experience of other developing countries and encourage exchange mechanisms and information flows that will make this possible. (It is deplorable, for instance, that information on developments in the People's Republic of China is discouraged in India).

(7) We should lend strong support to efforts to form a Third World Secretariate designed to improve the negotiating skills and strength of developing countries and promote closer economic cooperation among them.

(8) We should not ignore, but actively attempt to resolve, the major conflict of interest that threatens to disrupt Third World Unity viz., the effect of sharp oil price increases on the economies of oil-importing low-income developing countries. This involves intra-South negotiations, the inescapable need for which has to be faced.

(9) We must use the special relationship we enjoy with the USSR and East European countries as to persuade and encourage them to participate more closely in the NIEO. Their performance in this regard has so far been disappointing.

(10) Finally and fundamentally, equality and justice are not export products. The NIEO should be sought as the natural fulfilment and correlate of a new social and economic order within India. In fact, most of the NIEO issues have their internal reflection : the poor in India need assistance through the redistribution of assets and income; weak primary producers need stable and remunerative prices ; small producers demand better access to markets ; private investment needs to be more efficiently regulated; inter-state migrant labour should be given fair treatment; the operation of the credit system should be equitable. The new internal economic order, like the other NIEO, has to be a political process for structural change.

To sum up the thrust of these ten points; in the 1950s and 1960s, India pursued an activist policy of support to decolonisation and was a founder of the non-aligned movement. The 1970s have witnessed a transition in which India has allowed her role to recede. The NIEO is the logical sequence of decolonisation. The unity of the non-aligned is the political basis for the struggle for the NIEO. In the 1980s and beyond, India should actively relate herself to the NIEO on a basis of partnership and solidarity with other developing countries. Internal commitment to principles of equality and justice should be an integral element of the quest for a NIEO based on the same principles world-wide. The searchlight should constantly revolve outward and inward. □

The Haves And The Have-not Nations: Will They Meet?

Dr. B. Natarajan

IS IT THE FEAR that human effort built, brick by brick, over millennia might crumble, or possibly annihilate itself, and put the clock of civilization way back to prehistoric times ; or is it the grand revival of the Benthamite wish to take civilization to its pinnacle when every citizen of the world can be given the time of his life before the dawn of the Day of Judgement that is behind this recent quest, rather dialogue of a New International Economic Order (NIEO)? More likely, it is the former ; for, to speak practically, all but a minority would agree that an unequal society is better than no society at all.

However, it must not be forgotten that practical wisdom is invariably lost when pushed to desperation. Therefore, if by a new order we mean only to prolong an order, no matter fair or foul, then we may as well leave the fate of mankind to History to repeat or exhaust itself. No doubt an equal world order is no more realistic than equality within the nations. But any conscientious attempt at restructuring of the world order to be meaningful need necessarily have the basis of a square deal for every citizen

What went wrong with the Old Order

The old order roughly dates between the traumatic years succeeding the Second World War and the early and later the Dillon and Kennedy rounds of talks and the series of dialogues under UNCTAD) exchange rates were made stable and the flood-gates of world demand opened ; with that the countries of the world were off to an unhindered dash for development. Expectedly, what followed in the fifties and the sixties was nothing short of an economic euphoria on a global scale.

However as the First Development Decade of the sixties was coming to a close, it became apparent that there was more to the pattern of world development than met the eye. The several studies, particularly the Pearson Commission, that went into this question concluded that the development over the two decades of the fifties and the sixties had been skewed in favour of a few industrialised countries and that the gap between the rich and the poor nations far from closing had in fact widened. The annual growth rate of developing nations was 2 per cent in the 1950s and 3.4 per cent in 1960s, while the growth rate's of the rich nations were 4 per cent till the middle of the 1960s and 5 per cent after that. The percentage difference may not be much ; but the absolute size of growth (GNP) makes all the difference. The gap was evident in trade too. The exports of the rich nations grew, 7 to 8.5 per cent between 1959 and 1970 while that of the poor nations grew around 5 per cent. And of course all through this period the rich nations bought the primary products (raw materials) of the

There are both moral as well as material compulsions to usher in a New Economic Order. Human beings cease to be so, 'haves' among them turn a dead ear or a Nelson's eye to the plight of the 'havenots'. Civilisation becomes a farce too. It is only for those who have to share with those who have not. This moral obligation is meant not only among nations ; it is even more incumbent on the 'haves' within the nations.

seventies which saw the makings of yet another global confrontation—this time on the economic front. The backlash of the catastrophic world economic depression of the early thirties and the unprecedented wastes of the second war taught the world, in the hardest way, the need for cooperation. Thus emerged a semblance of a world order based on the common good of all nations. Among others, the U.N.O. was formed to keep the peace and the Bretton Wood's twins of IMF and the World Bank was formed to aid economic development. With fear of War removed, finance made increasingly available, pre-war trade barriers lowered (thanks to the General Agreement of Tariff and Trade,

B. Natarajan is Chairman of the Institute for Techno-Economic Studies, Madras

poor nations cheap and sold them back as finished products much dearer. With the need for import of essentials like foodgrains and other industrial goods never ceasing, the poor nations hardly ever enjoyed a net positive benefit from trade. In short, the old colonial pattern assumed new dimensions under a different guise.

These conclusions could not have been otherwise. While the poor countries had to start almost from scratch (most of them became independent only in the fifties and early sixties) the rich nations, which were already in a high state of industrialisation, had been only interrupted by the Second War. Historically the main ingredients of development have been a stable government, a sound base in science and technology

and industry and an expanding trade in manufactures. The rich nations had all these to their credit, while the poor nations distinctly lacked them. Added to this was the overriding factor of population explosion in the case of the poor nations, particularly the Indian sub-continent.

The world entered the 1970s mindful of (a) that the global growth may not be as smooth or as fast as in the previous decades and (b) that the distortions in development between the rich and the poor countries cannot be left unnoticed without untoward consequences. As if to give credence to this caution, came the surprise move of oil prices hike by four times, which to all intents and purposes brought to close the institutional arrangements of the old order. It looked as though the giant has woke from a millennium—long slumber, with a new consciousness of his inherent strength till now buried in the limbo of forgetfullness

The consequences. the trade deficits of the industrialised nations along with the debts of the poor nations leaptrogged leaving the IMF helpless to cope with the situation; the exchange rates got loose of their moorings and began to float compounding the issue; recession and slump in world trade, (Total world trade fell from 9 per cent a year between 1963 to 1973 to 4 per cent between 1973 and 1977) panicked the rich nations into protectionist policies both covertly and overtly, which only worsened the recession; inflation for the first time graduated into double digit in the rich nations and unemployment shot up everywhere— the new term in economics was born—stagflation !

While thus the world monetary system was disintegrating the plight of poor nations, beset perpetually with massive unemployment, hunger and high rates of inflation, became still worse as their imports became costly, exports curtailed and capital flows narrowed. It was roughly in this state of affairs in the world economy, that the U N General Assembly adopted the resolution on the Declaration on the Establishment of a New International Economic Order or "Planetary bargain" in 1974.

Why a New Order

There are both moral as well as material compulsions to usher in a New Order Morally, human beings cease to be so, if the 'haves' among them turn a deaf ear or a Nelson's eye to the plight of the 'have nots'. Not only that. Civilization becomes a farce. As the Pearson Commission observed "it is only right for those who have to share with those who have not". This moral obligation is meant not only among nations; it is even more incumbent on the 'haves' within the nations. Economically, the reasons behind the collapse of the old order should be enough to require a better New Order The rich nations may not be able to provide mutual markets among themselves for long. The strains are already visible in the form of increasing protectionistic policies. And if they are to turn to the populous third world nations—which they have to before long—they cannot do that unless sufficient purchasing power is generated in these countries—which in turn, is not possible without the help of the rich nations. Also, it is not healthy for the rich countries to continue to exploit the raw resources of the poor ones without due compensation. The oil crisis is only the beginning of what might happen if this trend continues. Finally, one should not forget that economic backwardness is the breeding ground for political unrest and degradation of human rights. A new economic order based on voluntary action and goodwill becomes a must, if only to forestall inevitable new order based on confrontation and violence.

There is yet another factor which is equally crucial in influencing the call for a new world order. It is the rapidly developing discipline of Futurology. Thanks to modern mathematical tools of forecasting we have been able to do a lot more than glean an insight into what may possibly happen, if the present trends in the world economy continue in the near and far future. The emerging picture portends increasing number of constraints to development in the years ahead—particularly because of (a) the depletion of nonrenewable resources like minerals and (b) the biological limits to renewable resources like water, forests and foodgrains, as their use is being increased beyond their regenerative capacity; and (c) breakdown of the institutional frame work of the monetary system under the weight of global inflation and unemployment. This awareness of possible future events has made a New World Order based on Cooperation imperative.

The New Order

First, the New Order, to be successful, has to meet certain pre-conditions: (a) A stable political order which should mean, among other things, drastic cut in wasteful defence expenditures. (b) Even if the different clusters of nations do not shed their ideological mantles, they should all agree atleast to a common plan in respect of economic problems of the world in general and the poor countries in particular. (c) A suitable institutional frame-work (or modification of the existing one) to effect this change to a new order.

Broadly, there seem to be two views on how the balance between the rich and the poor nations can be brought about One is that the rich nations' growth should not be halted in the process and that the poor nations may share in the incremental growth. The other is that the rich have already overgrown and that in their own sociological interest they should pause to consolidate their gains; and in the meantime they should work whole-heartedly to the uplift of the poor nations. The latter, though desirable, is too simplistic to work out in reality in the near future. The former, therefore, looks more practical. This can be achieved through either increased trade in favour of the poor countries or by outright aid of funds and goods or by the transfer of technology or, best of all, by a judicious combination of these.

Aid

A massive dose of aid is a necessary pre-requisite to impart the initial momentum to the poor countries. One should not forget the crucial role played by the Marshall Plan in the development of many of the European powers of today, particularly Japan and West Germany. Over the years the flow of official Development Aid by the OECD members has gradually declined from 0.5 per cent to 0.3 per cent of their GNP, which is less than half of what they had promised. This trend needs to be reversed. When America, despite the second war could contribute about 2 per cent of its GNP as aid to its allies in the West can it (and also its now developed allies) not share atleast half that much with the poor nations, if their interest in the new order is indeed sincere? At any rate is it not enlightened self-interest to do so? It is also high time that the centrally planned rich nations contributed their due share to international aid. However, in both the cases, care must be taken

to end the present practice of aid for flag. It is, therefore, better to route all aid through one common body like the World Bank. There should also be a mechanism to ensure the proper end-use of aid, so that the aid-receiving nations may not, as is now happening in many cases, fritter away the aid. A major portion of the aid, therefore, should be on the basis of "programme lending", so that a dent can be made on specific problem like poverty, illiteracy, malnutrition and lack of medical facilities.

Trade, as an instrument in North-South balance should not be applied indiscriminately. An export oriented growth is feasible only to a handful of developing countries, like the New Industrialising Countries (NICS), like South Korea, Brazil, Hongkong and Taiwan, who have the necessary manufacturing base. Probably that is why not many developing nations took the recent Tokyo round of talks for Multilateral Trade Negotiations seriously. Trade negotiations, as the ILO observed in 1976, are "unlikely to have a significant and immediate impact on mass poverty and inequality". However, measures to stablise the international prices of primary goods of the developing nations—such as the decision to set an Integrated Programme for Commodities—are of vital importance to all developing countries and must be pursued. For the export-oriented developing nations, however, trade concessions by the rich nations would help a lot. Better still, as has been suggested in certain quarters, the rich nations would do well to leave certain categories of manufactures to these developing nations who can meet the required cost and quality effectiveness and concentrate on developing and trading in better and newer technologies

The role of private foreign capital in the New Order is very crucial, for it is the easiest and surest way to bring the surplus capital of the rich nations and the unemployed resources of the poor nations together. The talk of western aid without considering western private capital does not make sense The question of transfer of technology is also closely connected with this. The poor nations should not be misled by the propaganda to confuse foreign capital with imperialistic undertones. Joint ventures between Governments, and between Governments and private sector, will also go a long way in aiding the developing nations.

Transfer of technology, as noted earlier, is closely connected with the question of private foreign capital, for it is estimated that about 90 per cent of the patent rights are in the private hands of the Western Countries, particularly the Multinationals. And it is also they who spend larger amounts by way of R&D to develop newer and better technologies. Therefore one cannot discuss the transfer of technology without bringing Multinationals into the picture. One way to minimise the deleterious role of Multinationls is to step up Government to Government transfer. And sizeable achievement in this direction can come, only if the centrally planned countries agree to share their technology without discrimination. But then, do all developing nations necessarily require this transfer of technology at present? In most of the poor nations there is hardly any infrastructure to put these modern technologies to proper use. Worse still, as has been happening in some cases, such benefits are put to use for nefarious pursuits. The kind of technology most poor nations need, except where export interests are predominent, is a simple one, such as modernising their traditional agriculture and aiding them to produce certain wage goods. Their appropriate technologies can possibly be developed indigenously or with the minimum external assistance. Therefore, poor nations can, and should in their long-run interest, minimise their dependence on foreign modern technology by suitably adjusting their consumption and production patterns. However, the NICS including India, who have also a good manufacturing-base can go in for higher technologies commensurate with their export prospects.

All said, the developing nations would do well to remind themselves that God and rich nations help only those who help themselves. They should first set their respective houses in order. For many of them politics, rather than economics, is the problem. They should realise that joining international power politics is not going to solve their problem. Non-alignment in letter and in spirit is vital for their much needed external capital from all sources.

The question of poverty requires a special mention. It is claimed that about 600 million are in poverty today and even in 2000 A.D. there will be half that number. There is an element of ambiguity involved here. The measurement of poverty is still a vague exercise. By and large the methodologies followed at present are rather normative. Often inequality is confused with poverty. One view has it that if individual requirements instead of average caloric norm is used India's number in the poverty line will be less than half of what it is claimed now. Such is the degree of difference between estimates. A broad survey would show that poverty today is certainly less rampant than what it was. One has not heard of mass starvation, deaths in the recent past. Even the recurring droughts do not claim lives as in the past. International aid—a good part of it by voluntary bodies—today is capable of facing such exigencies. One should not mistake the parading poverty in urban centres and pilgrim places for the real measure of poverty. Also the economy could not be blamed for poverty caused by incessant civil or intra-national wars. Therefore, it can be misleading to calculate poverty solely on the basis of per capita income. The real poverty gap today exists in the lack of facilities like health, education, shelter and a clean environment. It does not require a higher per capita income to close this gap. These facilities can be more effectively provided through common programmes by the public sector. With adequate international aid—preferably programme lending and local initiative, this poverty gap can be altogether closed effectively within a decade. However, the question of relative poverty gap, i.e., inequality in standards of living is a different matter which needs revolutionary changes in economic policies.

International monetary system seems to have suffered the worst jolt in the wake of the collapse of the old order, thanks to the Arab oil hike. The shortage in international liquidity has greatly undermined the role of the IMF. But for the European private banks which moved in to recycle atleast a part of the petro-dollars the blow would have been much severe. Worst of al is the return to floating exchange rates which has no only brought uncertainty back into world trade; i has also made nations less mindful of their interna policies to keep inflation in check. With inflatioı running loose, real aid and trade concessions in fac are a lot less than what they would have been.

A contrary view runs to the effect that it is outdated economic policies and not oil prices hike that are responsible for inflation and unemployment in the western nations.

In either case the solution obviously is more discipline in both internal and international monetary policies. The main task now is to increase the international liquidity. Of course one way to do this is to increase substantially the reserves of I.M.F. There seems to be general agreement in this. However it is also necessary to devise a way by which more of the recycled surpluses of the Western as well as the OPEC countries is diverted to the developing countries Private banking mechanism cannot bring this about The IMF itself can be expanded to make this come true, if only the surplus countries commit themselves to a sincere give and take policy Regarding exchange rates there is immediate need for stability. The uncertain fluctuations in major currencies is certainly not congenial to world trade, particularly the developing countries, notwithstanding such gimmicks as the Commodities Fund. The provision for domestic financial discipline in the aid receiving countries, should be made more strict Also it would not be improper to use a d as a force to tame the belligerant nature of some of the developing nations

India's Role in the New Order

India's growth over the years presents a mixed picture. It has registered remarkable progress in certain fields like heavy industry and lately in agricultural productivity, while in general it has fared poorly India's per capita GNP of $150 and its classification under Less Developed and, after the oil price hike, most Seriously Affected nations should not be taken at the face of it. Nor can it be strictly grouped with the NICS for we have not as yet had a real export orientation in our growth. True, population—not so much its rate of growth as the absolute size—has robber it of most of its growth. But then, should we not have planned in relation to our population than let it adjust itself to conventional growth ? We attempted a socialistic path to development. Yet why does distribution lag so far behind production ? In future therefore while export promotion can no doubt fetch us a sizeable share of the world growth, alongside we need to shift to a vigorous 'wage-goods' planning to make a dent on unemployment, poverty and income inequality

With its expanding manufacturing base, breakthrough in agricultural productivity and enormous manpower, India certainly has a conspicuous role to play in the new order. The basic policy should be to turn the problem of its huge population into its potential resource. This would require bold domestic as well as external policies. Domestically (a) agriculture and allied activities should attract added emphasis The aim should not only be self-sufficiency and a balance between cereals, pulses and commercial crops, but also to create a surplus for export India can do this if only it can muster the will to launch a massive integrated attempt to use its water, land and manpower potentials Institutional reforms, particularly land reforms, though themselves cannot provide the final answer, nevertheless are essential for keeping a balance becoming a second 'bread basket' next only to North America can hardly be called farfetched India cannot find a better contribution to world development.

The proper role for industry in India is (a) import substitution in the industrial needs of the agriculture and allied sectors like farm implements, fertilizer, pesticides, dairy equipments etc. and (b) export promotion of manufactures in tune with the trends in international trade. In the latter case the policy should be rather to expand our market in the developing countries of Asia, Africa and Latin America, than ineffectively bargaining for tariff concessions in the rich industrialised countries. A slant in policy in this direction is effectively bargaining for tariff concessions in the rich industrialised countries. A slant in policy in this direction is already discernible with the burgeoning exports of railway coaches, power equipments, engineering goods etc., by both private and public sector units to countries in West Asia, Africa and Gulf States. For the future development of these export industries we need not hesitate to buy, borrow or share the technology of the private sector of the Western Nations along with increasing our joint efforts with socialist countries

As the trends in remittances from abroad in the last few years have shown, our best chance in getting foreign exchange is through sale of our manpower, which accounts for two-thirds of the technical manpower in the world. It will also take some pressure off the domestic unemployment problem. The policy in future should be to turn the shortage of skilled and semi-skilled labour in both developed and developing countties to our maximum benefit. Among the developing countries we possess ample capacity in training labour India can 'undercut' any country in export of labour. thanks to the abstemious way of traditional life wlich is said to peg our relative wage level between one-sixth and one-tenth of the industrialised countries. As imaginative policy based on demand can capture us a sub tantial market in the entire gamut of services from such skilled professions as engineering, medicine and teaching to such sundry items like manual works, catering, tailoring and even household scores However, care should be taken to streamline these activities, so as not to fritter away the precious foreign exchange and add to the fuel of inflation, as is happening now. While the training, recruitment and arrangement of assisgnment can be left to the private enterprises, the Government should wield the over-all control, so as to (a) use the foreign exchange to the best interest of the country and (b) to ensure the quality and good conduct of the labour.

We should also start to tap unconventional resources. One such is the veritable mine of tourism. In certain countries, tourism accounts for as much as 10 per cent to 16 per cent of their GNP. India with its long unbroken coast line, numerous exquisite temples and historical sites, hill stations and sanatoria can reap a fortune in tourism.

Thus India in future has to combine the role of an aggressive exporter with a realistic socialistic pattern of growth based on a rural urban parity in income and employment opportunities through an effective linkage of the growth mechanism. Only then can we find the right answers to our specific problems like poverty, and unemployment, even at the cost of so called 'growth': China today is held out as the ideal model for the countries to achieve this kind of development. But India can prove to the world that it is possible to accomplish this without abusing democracy and basic human rights. □

Collective Self-Reliance

Balraj Mehta

THE SIXTH special session of the UN General Assembly in 1974 adopted a Declaration and Programme of Action on the establishment of a New International Economic Order. Subsequently, the UN General Assembly adopted a Charter of Economic Rights of Duties of States. These two documents represent significant outlines of the aspirations of the peoples for basic restructuring of international economic relations for growth based on equity and fair play in a new world economic order.

The adoption of these documents may not have in itself represented anything more than a formality. But they were important as the assertion on the part of the developing countries of their will to secure equitable norms and principles in international economic relations. It is not without significance either that both documents were adopted by voting in opposition to a small group of developed industrialised countries which have a vested interest in the existing order in international economic relations and have a stake in keeping them unchanged.

Norms and Principles

New norms and principles do not find acceptance and certainly do not become applicable as a result entirely and even mainly of argument and debate. There are real clash of interests to be reckoned with. The strivings for social and economic development of the newly independent countries after throwing away the shackles of colonial domination have to cope with sharp conflicts and many roadblocks if the principles embodied in the UN declarations are to prevail

The 34-clause charter on economic rights and duties of States is particularly noteworthy in this context. It proclaims the right of every state freely to exercise "full permanent sovereignty, including possession, use and disposal", over all its wealth, natural resources and economic activities. During the debate on the charter in the UN and subsequently, there have been attempts to dilute this position in various ways. The reservations of the developed countries over the unfettered right of a state to "regulate and exercise authority over foreign investments within its national jurisdiction" have been particularly strong and persistent even if they are illogical and a hang-over of an era that is fast passing away. Objection has been specifically to the clause in the declarations on the right to "normalise, expropriate or transfer the ownership of foreign property" even though compensation in the event of normalisation is assured. The point at issue here is the determination of compensation. The declarations rightly lay down that compensation should be settled under the domestic laws of the nationalising state and its tribunals. To question this proposition is indeed to question the full permanent sovereignty of the national state.

Significantly, only six states voted against the adoption of the charter on rights and duties of the states within the framework of the effort to bring about a new international economic order. This was mainly on the ground of their objection to the clause relating to nationalisation of foreign investment. Ten others abstained. The sixteen form the block of developed countries and their voting behaviour was evidently determined by the extent of scale to which their surpluses are invested in foreign countries. Those with smaller investments abroad abstained and the others voted against. The objections raised by them to a clause in the charter in favour of a linkage in the prices of exports of developing countries with the prices of their imports was also revealing of their vested interest in maintaining inequitable neo-colonial terms with the developing countries after the system of direct colonial overlordship has broken down.

Declaration

The fact indeed is that the quest of the developing countries for economic justice is seen by the developed countries as mere footnotes in the design of global economic relations. The proclamation of the first development decade and its objectives, for instance, was soon found to be no more than a sop for the poor countries. The same has been the case with the work of the UNCTAD, the GATT and many other international agencies.

The developed countries and the international institutions dominated by them have always tended to search for remedies within the convention framework of short-run balance of payments difficulties in international trade and capital flows. This approach has resulted in the developing countries piling repayment liabilities which have touched staggering proportions. This testifies to a vast disequilibrium requiring structural reform in the world trade and payments system which will ensure net transfer of real resources from the developed to the developing countries. But the trends in international economic relations in recent years have been in the contrary directions. In the effort to absorb the effects of increase in oil prices which resulted in a measure of diversion of financial resources to the oil exporting countries, in particular, the developed countries have been ruthless in the exercise of their superior power to extract more surpluses from the Third World. The starting point for the balanced growth of the world economy and progress towards the fulfilment of the commitment to a new world economic order has, therefore, to be substantial scaling down of the outstanding debts of the developing countries. Bargaining on short term rescheduling of repayment liabilities and similar other complicated devices cannot help. This has to be combined with a fresh start on establishing fair terms of trade and capital flows in international economic relations.

Balraj Mehta is Assistant Editor, Indian Express

It is thus of utmost importance and urgency that the issue of new world economic order should go beyond securing good declarations in UN and other world fora. It has to be a programme of action. The economic declaration of the non-alignd nations are particularly significant in this context and offer the basis for such an action programme. The fact after all is that economic issues have become the "major concern of international politics" and the "developing countries should use their political sovereignty and independence as a lever to attain their economic sovereignty and independence" as the non-aligned countries forcefully affirmed at their Colombo summit in 1976. This gave a richer content and a larger dimension to the non-aligned movement which took giant strides forward at Havana Summit year. The principles and norms outlined at Havana or at Colombo earlier were, not of course, novel. They figure in some form or another, wholly or in part, in all international consultations and negotiations. But the stubborn refusal of a handful of the developed countries to accept the principles of mutual obligations under which the purchasing power of the developing countries in world trade would be safeguarded and their development needs provided for has so far blocked any real progress towards their realisation in practical application in world economic relations and the functioning of the global economic system.

Persuasion than Confrontation

The point of departure here, in contrast to debates, discussion and negotiations in the UN, the UNCTAD and other forums, is the resolve of the developing countries to evolve and exercise effective sanctions in the struggle for a new world economic order. The developing countries have long hesitated to stage a confrontation against the developed countries. There are still many among them who would prefer to counsel patience and rely on persuation to make the developed countries more reasonable and cooperative. But the stress on collective self-reliance as the 'guarantee for the eventual emergence of the new order is most significant in this context. More importantly, specific proposals and projects have to be initiated to concretise the definition of collective self-reliance as close "cooperation among themselves in financial technical trade, industrial and other fields." The problems here are complex and it must be realised that their resolution will require fundamental structural changes in the socio-economic set-up within each country and in the economic relationship between the countries of the Third World themselves Only in so doing will the striving for a new world economic order be elevated from the level of wordy debates at international conferences and enter the realm of a programme of action.

A related thrust in the same direction can be provided by carrying out the plan of action of the UNIDO at Lima in March 1975 when the developing countries set out rapid industrialisation of their economics as a priority task and set the target of achievement of 25 per cent of world industrial production for themselves by the end of the century

Industrialisation of Developing Countries

The industrialisation programme of the developing countries has placed under reliance in the past on aid-financial and technological from the developed countries and has tended to neglect the potential of cooperation among themselves. This was due to the false notion that there was no complementarity between them and that this was a permament state of affairs. This approach is now in the process of being discarded. A compelling factor in this development has been the unhelpful attitude of the developed countries towards the problem of net transfer of resources to the developing countries and their reluctance to bring about a more equitable distribution of world resources in raw material, capital and technology as part of a global cooperative endeavour. On the contrary the frame work of donor-donee relationship has resulted in enmeshing the developing countries in invidious and debilitating trade and aid arrangements with the developed countries. The developing countries in seeking to extricate themselves from this state of affairs have no alternative but to search for fruitful areas of complementarity among themselves within the framework of Third World solidarity.

Adequate resources-material and financial-have been created within the Third World in recent years as a result of the efforts of the national governments of the developing countries after freedom from colonial bondage. Moreover, oil surpluses of the OPEC countries has added a new dimension to the resources of the Third World. If these resources are pooled and deployed to mutual advantage, growth in the developing countries is bound to get an impetus. The Third World as a whole and the developing countries individually will also be able to secure equitable terms in their economic relations with the developed countries. India at the present stage of its development can play a significant role in this context and can acquire a new status in the Third World. Significant surpluses in technology and equipment have been created in India which can be used by other developing countries to mutual advantage. India has also a large reservior of skilled manpower which can be used by other developing countries on terms more advantageous to themselves than what they can secure from the advanced countries. This should provide an occasion to work out an acceptable and mutually beneficial basis on which this may be done and to build an institutional framework for this purpose.

Balanced Growth of World Economy

The hope of orderly and balanced growth of the world economy in which the developing countries fully share has failed to materialise so far. The grim and formidable problems of global inflation, balance of payments deficits and food shortages have hit the developing countries the hardest. The response to the crises has necessarily mixed and often contradictory. It is vigorously argued in many quarters, both in the developing and the developed countries that the goals of development planning in the Third World will have to be redefined and its tools refashioned. The proposition is advanced that "growth dominated and efficiency motivated" development strategy had proved ineffective and must be discarded in favour of a new set of investment priorities and allocations, structures of production and directions of external trade which will be oriented towards providing social well being. To accept such a presentation of the economic and social problems of the developing countries to renounce the need for a special effort to force the pace of their industrialisation. But the experience of the developing countries shows that the supposed dichotomy between growth oriented planning and planning for mass well-being is deceptive. A global version of *garibi hatao* which India tried to experiment with and proved to be a miserable mirage must not be discarded most emphatically and unreservedly. □

Restructuring of International Economic Relations

Subrata Banerjee

THE PRINCIPAL issue before the world today is the elimination of the poverty of millions of people in the countries which have achieved freedom since the end of the second world war. With this is also linked the question of poverty, however relative, of hundreds of thousands in the advanced capitalist countries. It is significant that India, considered one of the leading industrialised countries, is also one of the poorest. After two decades of planning the per capita income rose by only Rs. 241 and the national income by only Rs. 28,608 in 1970-71. And this is no true measure of our poverty as there are hundreds of thousands who do not really earn anything near the so-called per capita income. According to a recent World Bank report we are still 100 years behind the USA.

There was a time when the gap was not so wide Over a period of two centuries the average per capita gross national product of the western countries has multiplied more than 15 times, while that of the countries of Asia, Africa and Latin America has barely doubled. This is the result of the Colonial predatory plunder by the western imperialist powers That the colonial plunder has continued, although in a more indirect fashion, is evident from the fact that between 1953 and 1973 the gap between the average per capita gross national product of the developing and the developed capitalist countries has doubled.

The relationship between returns from trade and the actual aid provided by the advanced capitalist countries is well established. The tariff structure imposed by these countries on imports from the developing countries is twice as much as from among each other. The profits of the supranational corporations in the developing countries in the second half of the sixties—the first development decade—equalled $23 billion, which was 50 per cent more than the total foreign aid provided by the countries of their origin. During the same period the indebtedness of the developing countries reached $80 billion; the deficit balance of 25 least developed countries, on account of increased price paid for food imports, was 70 per cent more than from a rise in oil prices, on which all the ills of the world are blamed by the developed capitalist countries, while their notorious Seven Sisters—the oil cartels—continue to increase their profits year after year.

It is necessary to remember that the USA and Canada control a larger share of surplus foodgrains than West Asia does of oil. In 1972, the USA and Canada imposed restrictions on food and soya-bean exports, the principal protein source for one billion people in South East Asia.

Tariff and Non-tariff Barriers

We take pride today in our increasing export of engineering products, especially capital goods to the advanced capitalist countries. According to a report of the Federation of Indian Chambers of Commerce and Industry on export and production perspectives for 1980-81, almost all our export products face tariff barriers. These are higher in the case of Australia and the USA as compared to EEC and Japan. At least 26 items have been affected by duties going up to even 50 per cent, as in the case of vegetable products in the USA. There are also non-tariff barriers in the form of quotas, discriminatory licensing, affecting most of our traditional items. This situation comes into direct conflict with our efforts to balance the external payments position. The much-publicised Generalised Scheme of Preferences covered only 13.8 per cent of our total exports in 1974. Reduction in textile imports by the USA and the EEC have meant Rs. 100 crore decline in our exports in 1978-79. Between 1977 and 1978 our share of EEC's global imports declined from 0.96 per cent to 0.93 per cent while their exports to the USA increased 30 per cent.

A total break with the advanced capitalist countries is inconceivable. It would only slow down the growth process and increase the cost, causing unnecessary hardship to the people. The need is to change the pattern of the present capitalist international division of labour, because continuation in the same form is no longer possible as it has led to stagnation and the danger of the exhaustion of our national resources. This is the basis of our demand for a fundamental restructuring of international economic relations.

Let us have a look at ourselves. We are one of the largest recepients of aid from the advanced capitalist countries. In 1976-77, for example, total West German aid amounted to Rs. 83.74 crore Total payments on account of principal and interest on past loans came to Rs. 62 86 crore and Rs. 31 44 crore respectively leaving a net minus balance of Rs. 10.56 crore. In 1976-77, the total foreign remittance was Rs. 343.6 crore, of which interest on official and private loans came to Rs. 228.3 crore or 65 per cent. Dividends, profits, technical fees, royalties, etc. amounted to Rs. 115.3 crore. Between 1965-66 and Rs. 1975-76 private foreign companies alone took away more than Rs. 664 crore. India's debt service payments have doubled from Rs. 450 crore in 1970-71 to Rs. 900 crore in 1978-79.

Subrata Banerjee is former Asst. Editor, Economic Times, New Delhi.

In 1978-79 our capital goods exports were valued at Rs. 250 crore. Of this, boilers and pressure vessels accounted for Rs. 77 crore. On the other hand primary steel and iron based items, non-ferrous products and consumer durables exported were valued at Rs. 475 crore. Despite an increase in the value of our exports from $ 1,626 million to $ 4,180 million between 1963 and 1975, our share of world exports went down from 1.20 per cent to 0.53 per cent. Thus the expansion of the value of exports, thanks to inflation, is very deceptive.

Apart from protectionism, denying us markets in the advanced capitalist countries, we are forced to export often at low prices and import manufactured and capital goods from them at inflated prices. India's export items which have been subjected to disruptive price fluctuations in the seventies included tea, iron-ore, jute, and sugar. Haberdashery and leather goods from developing countries are subject to an average of 15.5 per cent duty, but hides and leather only 1.1 per cent, cotton garments 26.6 per cent but raw cotton only 6.2 per cent, woollen fabrics 50.1 per cent but raw wool 11.4 per cent. Britain does not impose any duty on raw jute imports but charges 15 per cent on jute yarn and 20 per cent on jute articles

As a recent report by the ESCAP secretariat has pointed out: "Other developing countries, such as India and Singapore, which are relatively advanced in industrial terms and which export a wide range of manufactured goods, are also being frustrated by increasing protectionism in fields additional to clothing and textiles In India's case this could easily divert attention from potentially lucrative export production in which it has developed a genuine competitive advantage." It is significant in this context that the GSP generally covers only commodities which do not compete with the production of the advanced capitalist countries concerned. As a result in 1971—74 not a single export commodity could use up the preferential limits granted by the Common Market India is further affected by the protectionism in the USA and the EEC in relation to ship building, steel products, transport equipment, cars, chemicals and pharmaceuticals, to mention a few.

Global Inflation

Global inflation is another factor which operates against the interests of developing countries including India It is another measure for the reverse transfer of resources from the poor to the rich It sends up freight, insurance and other "invisible" trade charges. Tied aid with rising prices of imports reduces the real value of aid

According to the ESCAP report, referred to above, "It is fairly apparent that the timing and the magnitude of developments in prices and production in the large industrial economies which dominate the international trade of the market economies have been instrumental in the genesis of international inflation and its transmission through trade and financial transaction to the development economies of the developing world." In this context, it is significant, that the UNCTAD in a report on the outlook for the eighties, has estimated a rise in foreign aid debts and trading deficits of the developing countries by the end of the period. It is to be noted that India's foreign trade balance has already begun to dip. The report also visualises a decline in the overall rate of economic growth of the OECD western industrial countries to only two per cent in 1980. The UNCTAD report goes on to say: "Given the importance of these countries' markets for Third World exports, this is one of the principal negative factors affecting prospects of developing countries." It also expects continued recession resulting in a reduction in demand in the advanced capitalist countries and a drop in commodity prices. It further points out, "Whereas in 1979 food commodities are seen rising 11 per cent, agricultural raw materials 15 per cent and minerals by about nine per cent, in the following year the projected increases are only nine per cent, six per cent and two per cent respectively."

We are really caught in a vice. The market is denied to us and we are paid low prices for our exports. We have to pay higher prices for our imports. And import we must to meet not merely our needs of oil, but also food and machinery, spares, and raw materials. To be able to import we have to export. The FICCI report referred to above has estimated a non-food and non-oil imports requirement of Rs. 4,284 crore by 1980-81 if a ten per cent per annum growth rate is to be sustained. A six per cent inflation, without aid, would nearly double our value of imports. A ten per cent inflation would raise the figure to over Rs. 10,000 crore. According to some estimates a general 60 per cent reduction in tariff and non-tariff barriers would raise Indian exports by about $ 126.3 million at 1974 prices.

Colonial Plunder

Another area of colonial plunder is the intimate relationship between aid and the role of the supranational corporations. Foreign aid from the advanced capitalist countries as also from the international aid agencies are sources for the entry of the supranationals into the country. PL-480 funds were used for the encouragement of Indo-US collaboration involving supranationals. So intimate has been the integration between Indian entrepreneurs and these international giants that the FICCI openly pleads for more foreign investment and under liberal terms as bait for wider market entry in the advanced capitalist countries. This is in tune with the suggestion of Mr. James A. Shinn of the Chase Manhattan Bank at the Indo-American Chamber of Commerce on May 4, 1979. Aid is designed to meet the business requirements of the donor countries. As a result the sectoral distribution is not often in our development interest. Major foreign investment in India is in oil paints, processed food, electrical goods and drugs and pharmaceuticals mainly aimed at a high income elastic demand. This has caused a severe distortion of priorities, encouraged conspicuous consumption resulting in unproductive use of potential savings and lower capital formation, which in turn has slowed down economic growth encouraging continued dependence on foreign aid. Between foreign aid and the supranationals are today determining our development strategy, be it in agriculture or in industry. This obviously acts as a fetter on our sovereignty. Economic life today has been internationalised under the control of supranationals as a weapon for the integration of all non-socialist developing countries into the world capitalist system. As Merlin M Magallona, Associate Professor of Law, University of the Phillipines, has put it: "Strong presence of multinationals in a developing country on the basis of surrendering its eco-

nomic sovereignty revitalises the economic essence of colonialism and curtails considerably political independence." (New Perspective, March 79).

Pseudo-Gandhian Approach

The neo-colonialist offensive against India today uses the pseudo-Gandhian approach of "small is beautiful", integrated rural development and export-oriented industries, to convert our economy into an agrarian and industrial appendage of the advanced capitalist countries. The scientific and technological revolution makes possible the creation of a more sophisticated form of dependence. The specific feature of neo-colonialism as we can see it practiced even in India is the interlocking of economic arrangements represented by the supranationals, holding companies, patent and royalty arrangements, manipulation of world trade, domination of world shipping and control of the mass media.

The concept of the New International Economic Order has been evolved to bring to an end exactly such a state of affairs. in which underdevelopment is being perpetuated and even the political sovereignty of the developing countries is being threatened. The declaration of the UN General Assembly of May 1974 categorically states that the object of the New International Economic Order is to "correct inequality and redress existing injustices, make it possible to eliminate the widening gap between the developed and the developing countries." This demands the liquidation of unjust and unequal economic relations between the developing countries and the advanced capitalist countries, through a restructuring of industry, trade and the international capitalist monetary system, and the democratisation of such international financial agencies as the World Bank and the IMF and all international development agencies and decision making bodies.

India's interest in such a programme cannot be overestimated. Restrictions on the exploiting activity of foreign monopolists and the gradual elimination of their domination of the economy, especially in key sectors and the introduction of national control in most spheres of social reproduction are measures of decisive significance to give our economy a new dynamism. The task is to reduce to the minimum the outflow of resources caused by the integration of the economy with the world capitalist system and make foreign capital brought to the fore by the very logic of our pattern of economic development.

Demand for Fundamental Restructuring

A total break with the advanced capitalist countries is inconceivable. It would only slow down the growth process and increase the cost, causing unnecessary hardship to the people. The need is to change the pattern of the present capitalist international division of labour, because continuation in the same form is no longer possible as it has led to stagnation and the danger of the exhaustion of our natural resources. This is the basis. This is the basis of our demand for a fundamental restructuring of international economic relations.

The real issue is as much political as economic, as pointed out by Mr. L. K. Jha in *The New International Economic Order*—The Basic Issue in *Man and Development* (October 1979). It is not merely a system for the sharing of prosperity, but also of power between the erstwhile imperialist rules and the earestwhile colonies. It might also be pointed out that by calling for the regulation of the international free market and monopolistic manipulations, the New International Economic Order really hits at the very foundation of the world capitalist system. This would probably explain the inhibition of the ruling classes of India, whatever their party affiliation, to pursue the issue more vigourously.

Mr. Jha also draws attention to the fact that the objective is not merely to redistribute the existing wealth but create conditions for the generation of greater wealth by bringing idle hands into the production process through a planned redistribution of resources.

Objective Conditions for Success

The question that is often posed is whether such a restructuring can be achieved ? There is no doubt that the advanced capitalist countries are sharply opposed to it. They have been trying to prevaricate and delay action on the UN declaration. Hence the task will not at all be easy. But the objective conditions exist for the success of the struggle. The liquidation of direct colonial rule has led to the establishment of independent national states. Among the vast majority of them, united in the non-aligned movement, the awareness exists of the urgent need to achieve economic independence, to consolidate, strengthen and further extend political sovereignty. This is evident from the fact that the Heads of States and Governments at the recent non-aligned summit at Havana "once again emphasised the paramount importance of consolidating political independence by economic independence", as pointed out by Fidel Castro in his address to the latest session of the UN General Assembly.

Another major factor in our favour is the existence of a strong liberation movement in the last strongholds of imperialism in southern Africa, a struggle backed morally, materially and diplomatically by the non-aligned and the socialist community. This brings me to the last but the most significant objective factor in favour of the struggle for a New International Economic Order. This is the existence of the socialist system whose economic and political relations with the developing countries is based on equality and full recognition of the independence and sovereignty of the countries concerned. The Soviet Union and the socialist countries do not invest abroad and extract superprofits from the exploitation of cheap labour and raw materials. Their aid pattern is not designed to build a consumption-oriented economy, but to strengthen the economic independence of the recepient country. They do not indulge in unequal trade nor do they export inflation as their economies are free from this scourge. Here is an example of international economic relations based on a regulated market.

The close association of the Soviet Union and the socialist community with the liberation movements the non-aligned and developing countries on a wide range of international political and economic issues, including the New International Economic Order, and the atmosphere of detente initiated by the Soviet Union with the possibility of a reduction in defence expenditure, have created conditions for the possible success of the struggle for a New International Economic Order.

With the changed correlation of international forces today the socialist system interacts with an international economic so far exclusively dominated by capitalism. This creates conditions for us to be able to

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Imbalances in Our Balance of Payments

Bhabatosh Datta

WHEN RELEASING the short-term forecasting exercise for the annual plan for 1979-80, the Planning Commission listed the "structural weakness in the balance of payments" as one of the major imbalances in the economy. Two aspects of the balance of payments problem were emphasised: the falling rate of growth of exports and the fact of the dependence on the surplus in the invisible account to reduce the deficit in the visible trade. Both of these factors require detailed examination. The quantum of exports and their share in the next national product are important, but more important are the commodity structure of the exports and the methods adopted in recent years to secure a high rate of growth. And in the case of the invisible account, the most important problem arises from the nature of the particular component which is now contributing most of the creation of a final net surplus.

period remains at around 3 6 per cent per year, exports as a share of the national income may continue to rise. It is also to be remembered that imports have grown at a rate slightly above the rate of growth of exports and that in 1978-79 the ratio between imports and the national income was 8.93 per cent. The increase in oil prices may push up the total import bill from Rs. 6764 crore in 1978-79 to Rs. 9000 crore in the current year.

One of the glaring facts in the picture for merchandise trade is that in the case of exports, practically the entire earnings come to the private sector, while in the case of imports, the share of the official sector is relatively large. In 1976-77, for example, the private sector exports (as recorded in the balance of payments account) accounted for Rs. 5111 crores in a total of Rs. 5133 crore, while on the import side, the government sector imports were Rs. 3448 crore against the private sector imports of Rs. 1369 crore. The private account export surplus in that year was large enough to cover the import surplus on government account and still to leave a net trade surplus of Rs. 316 crore, A net trade surplus in the aggregate is not however normal for India, and substantial trade deficits have again appeared—Rs. 1073 crores in 1978-79 and possibly Rs. 2500—3000 crores in 1979-80.

One of the glaring facts in the picture for merchandise trade is that in the case of exports, practically the entire earnings come to the private sector, which in the case of imports, the share of the government sector is relatively large The author, while discussing the weakness in our balance of payments, says that these arise from the uncertainties in international markets. He warns that the weaknesses have to be watched carefully or else some of them may be responsible for driving us from a position of advantage to a critical one in a short span of time.

Our exports, according to customs data, were only Rs. 1535 crores in 1970-71. The provisional estimate for 1978-79 is Rs. 5692 crores and it is now anticipated that the figure might reach Rs. 6000 crores in the current year (1979-80). The four-fold increase in nine years implies an average annual compound rate of growth of 16.5 per cent, but the major part of the increase took place in the three years 1974-75, 1975-76 and 1976-77, when the rates of growth were 31 9 per cent, 21.4 per cent and 27.2 per cent respectively. Then there was sharp change and the exports increased by only 5.1 per cent in 1977-78 and 4.5 per cent in 1978-79. If the 1979-80 figure reaches Rs. 6000 crore, the increase will be about 6 per cent.

Growth of National Income

Expressed as a percentage of the national income, the exports rose from 4.47 per cent in 1970-71 to 7.73 per cent in 1976-77. The percentage started falling in the following year and was 7.46 in 1978-79. It has to be noted however that if the average rate of growth of the national income over a five-year of ten-year

Private Imports

It is not an element of weakness in the balance of payments that the private sector exports pay for the government sector imports. In a country pursuing a course of planned development with an expanding public sector, private imports have to be restricted and the major imports (capital goods and industrial inputs, especially oil) have to be in the government sector. On the other hand, the public sector investments would be expected to provide capital goods and essential services to the domestic economy and therefore official exports will be small. In fact, the official exports would have been even smaller than they are, if it were not necessary to engage in government-to-government trade with the East European countries.

Bhabatosh Datta is an Emeritus Professor in Economics, Calcutta University.

The disturbing elements lie elsewhere. First, as the government imports are for the maintenance and expansion of the public sector planned investments, they are more or less price-inelastic, i.e., they cannot be reduced appreciably if the prices increase abroad. This is amply demonstrated in the case of our oil imports. The exports are however price-elastic in most cases, a rise in domestic costs due to inflation may increase the prices so much that the physical quantum of exports as well as the total earnings from them will fall substantially. India's exports in most cases constitute a very small fraction of the total supplies in the world market and therefore a rise in costs in India cannot in general be covered by selling abroad at higher prices.

A good example of the uncertainties in our export trade is sugar. The quantity exported rose from 253,000 tonnes in 1973-74 to 695,000 tonnes in 1974-75 and further to 1,201,000 tonnes in 1975-76 It then fell sharply by more than 50 per cent in 1976-77 and then to only 70,000 tonnes in 1977-78. The earnings from sugar exports fell from Rs. 472.30 crores in 1975-76 to only Rs. 17.30 crores in 1977-78, which was the result of a sharp drop both in quantum and in the unit price realised abroad. Sugar accounted for about 12 per cent of our total export-earnings in 1975-76, but it contributed only 0.3 per cent in 1977-78.

Even in the case of the exports which have in general shown a steady increase, the risk of sudden shocks is present. A change in fashions abroad may affect the exports of cotton apparel and there may be new restrictions or new competition in the foreign markets. A sudden announcement of the presence of 'salmonella' or some other infection in the case of fish and fish preparations may cause a sharp drop in the earnings. A decline in the supply of cashew nuts from abroad may affect seriously the export of the 'value-added' kernels. Another item of a similar nature is the broad group of precious and semi-precious stones. Our export of this group of products is increasing rapidly, but about 60 per cent of the value of the exports comprises imports of unworked stones. The dependence of the Indian diamond-cutting industry on the monopolistic supply of rough diamond from a foreign-based company is a matter that introduces elements of uncertainty.

Import and Export Contents

This leads to the more general question of the import contents of our exports. A full answer to this question will require a commodity-by-commodity analysis. Even in the case of the same commodity, the import-content may vary from factory to factory. It is however possible to be more definite about the subsidies and other types of advantages by which some of our exports have been propped up. It is estimated that the total money-value of the various export incentives—duty drawbacks, cash compensatory support, interest subsidy, market development allowance and import-replenishments—came to about Rs. 450 crores in 1976-77. This was about 10.5 per cent of the total value of exports in that year, but the percentage will be much higher if the benefits are set against the actual exports to which they are relevant.

This constitutes one of the major weaknesses in our balance of payments. The various incentives have a budgetary effect and there is the problem of the domestic real cost of converting exports uneconomic from the standpoint of the country to economic exports from the standpoint of the exporters. The position now is disturbing. Any withdrawal or reduction of the subsidies will raise a clâmour and induce industrial activities which may impinge injuriously on the raw material producers and workers. A continuance of the subsidies means in effect a selective devaluation of the rupee. The cost of this is being borne by the tax payers in general, while the benefits go to the export houses. It is worth noting that the export-lobby has become very strong with the entry of the newly-proliferating multinational firms into the export business. This proliferation is induced by high profits and by the relaxation of the FERA provisions for export industries. If there is a further increase in the

India's Balance of Payments, 1976-77

(Rs. crores rounded)

Net Deficit items		Deficits	Net surplus items		Surpluses
1. Official Merchandise	(22=3448)	3426	1. Private merchandise	(5111=1369)	3742
2. Investment Income	(187=313)	126	2. Non-monetary gold	(5=0)	5
3. Private Capital	(121=132)	11	3. Travel	(285=38)	247
4. Official amortisation	(0=316)	316	4. Transportation	(313=248)	65
5. Miscellaneous-capital	(339=813)	474	5. Insurance	(51=30)	21
			6. Govt. n.i.e.	(81=50)	31
		4353	7. Miscellaneous-current	(263=252)	11
			8. Private transfers	(746=7)	739
Excess of surpluses over deficits		1720	9. Official transfers	(223=7)	216
(a) Increase in reserves	1396		10. Official Loans	(1186=307)	879
(b) Errors and Omissions	324		11. Banking	(236=119)	117
	1720	6073			6073

subsidised exports; the measurement of the domestic impact of the balance of payments will include the large budgetary burdens and the high social cost of diverting resources to uneconomic exports. The question whether all the subsidies are necessary when we have a large stock of foreign exchange resources is also important.

A more important question is that of the imbalance in our 'invisibles' account. It should be emphasised first that there is nothing wrong or undesirable in a payments structure in which the surplus on the invisible account pays for the deficit in the merchandise account. Great Britain for more than a century was, the classic case of a country depending on the income from invisibles—interest and dividends from investments abroad, earnings from shipping, insurance and banking services, remittances from the British nationals serving abroad, transfer of savings by such nationals and pensions paid by the colonial governments to their retired British employees. The income from all this easily paid for the large imports of food and raw materials. The Indian case is superficially similar, but one finds major differences if one enters into details.

For this, it is necessary to keep the fall picture before one's eyes. The accounts presented in the table relate to 1976-77, the latest year for which full details are available. Instead of putting the accounts in the usual form, showing the current account credits, debits and the net position item-by-item first and then repeating the process for the capital account, the table shows side by side the items which involve a net deficit and the items that involve a net surplus The credits and debits under each item are shown within brackets.

Before examining the components in the accounts, it should be noted that the 'invisibles' account shows all round improvement when compared with the position at the beginning of the decade In 1971-72, the net earnings of the country on the 'travel' (tourist) account were only Rs. 12 crores and they increased to Rs. 247 crores in 1976-77. The net earnings from shipping etc. (transportation) rose from Rs. 43 crores in 1971-72 to Rs. 65 crores in 1976-77. The net income from insurance was converted from a deficit of Rs. 5 crores to a surplus of Rs. 21 crores. Official transfers rose from Rs 75 crores to Rs. 216 crores and there was the very remarkable increase in net private remittances received from abroad from Rs. 162 crores to Rs. 739 crores. In the case of investment income there was a large deficit still, but it was much larger in 1971-72. The reduction in the deficit from Rs. 227 crores to Rs. 126 crores meant an improvement of Rs. 101 crores. It was only in the case of official loans receipts that there was a decline. The net figure of Rs. 879 crores for 1976-77 was higher than Rs. 616 crores in 1971-72, but in 1974-75 and 1975-76, the net inflow of official capital was Rs. 1554 crores and Rs. 1534 crores respectively.

Taking the summary accounts for 1976-77, and ignoring the minor items like the net private capital flows or non-monetary gold, one can broadly say that the deficits on account of official merchandise trade, investment income and official amortisation were more than covered by the surpluses on the private merchandise account, the current account invisibles and the net inflow of official loans. The excess of the surpluses over the deficits was Rs. 1720 crores. If the accounts had all been perfect, the reserves would have increase by that amount. But the actual increase in reserv was Rs. 1396 crores and the residue of Rs. 324 cror was shown in the account as "errors and omissions

Contrast in Balance of Payments

The contrast between this and the British balan of payments before the second world war lies in tl composition of the invisible account. In India, tl private transfers play a dominating part in the pictur while in Britain the earnings on the invisible accou came mostly from shipping, banking and insuran services and from investment income. The bas difference lies in the fact that while the British ear ings were contractual receipts for the sale of mucl demanded services (including capital), the major pa of our receipts on the invisible account are gratuito or unrequited receipts depending on factors whic may suddenly prove volatile.

Remittances used to come formerly from Indiar in Africa and South Asia. Gradually the remittanc from the Indian migrants in Britain increased. An now the major part of the remittances come from tl Indians in West Asia. The regional breakdown (the receipts and payments shows however that eve in 1976-77, when the gross inward private remittanc were Rs. 746 crores, nearly 86 per cent came from th sterling and dollar areas. The Overseas Sterling Ar includes Kuwait, Oman, Qatar, the United Arab Em rates and Yemen and the receipts from these coun ries are recorded in sterling. It is likely that remi tances from other West Asian countries are also mac in sterling or dollars. The fact that many countri with undeveloped banking are involved leads to tl possibility of the introduction of strict exchange contr in those areas, which may suddenly reduce the flow Besides, there may be sudden restrictions on India entering these countries. There is the further poss bility that as the old migrants become old residents i their new homes, their links with India will becon weaker. A sudden political upheaval in a major We Asian country may reduce the flow of remittance A part of the remittances received in India is held special non-resident deposit accounts. The flow in these accounts is already being affected by the hi interest offered on deposits in some of the well-know 'tax-haven' countries and even in the traditional ban ing centres. The inward remittances have increas further since 1976-77, but the danger of a sudd decline remains.

The real problem is that a very large part of tl earnings on our invisibles account is of this type. H they been of the contractual type, resulting from t sale of services and if the provision of these servic could be made a growing industry (like shipping a insurance in Britain), the position would have be much stronger. India's gross receipts from shippi increased substantially (from Rs. 112 crores in 197 72 to Rs. 313 crores in 1976-77), but because of t simultaneous increase in the out-payments also, the r receipts increased from Rs. 43 crores to only Rs. crores. The 'travel' account shows a large impro ment; the gross receipts were Rs. 32 crores in 19 72 and as much as Rs. 285 crores in 1976-77 w the net surplus increasing from Rs. 12 crores Rs. 247 crores. But here also the improvement w largely due to the influx of West Asian tourists a there is always an element of uncertainty in su sudden increases.

The investment income account (which is in the contractual category) shows a welcome decline in the net deficit from Rs. 227 crores in 1971-72 to Rs. 126 crores in 1976-77 This improvement took place despite a substantial rise in our outpayments The notable feature here is that the gross credits on this account (receipts of interest, dividend etc.) were Rs. 187 crores in 1976-77 against Rs. 35 crores only in 1971-72. This increase, it should be noted, came not because of an increase in commercial outflows of investible funds, but from the simple fact of the accumulation of foreign exchange reserves. About half of these reserves is now invested in short-dated government securities abroad, bringing a return of around 6.5 per cent. The increase in the receipts is thus a result of our failure to utilise the reserves that were growing over the past few years If the reserves do not grow further, the income from this source will not rise. And if the reserves are drawn down, as is likely in the near future on account of the rising oil bill, the investment will have to be liquidated Our obligations to pay interest on loans will continue to increase, and the negative balance may again become quite large.

Conclusions

Summing up, one can point out that there are a number of weaknesses in our balance of payments position They arise from the uncertainties in international markets which may cause sharp fluctuations in our export volume and in the earnings from some important commodities These uncertainties may emerge from increased third-party competition, increased import restrictions abroad and from the unsettled exchange and market conditions in many areas The dependence of a large part of our exports in subsidies of various sorts, equivalent to selective devaluation, is also a sign of weakness. The rise in import bill for oil may continue to spell danger for a number of years The travel account credits may fall if there is a diversion of the West Asian tourist expenditure away from India The receipts from the investment of our foreign exchange reserves are likely to fall. The large and presently increasing inward private remittances may not continue at high levels for a long time. The net inflow of official loans shows signs of decline and, in any case, the amortisation liabilities will increase. And, above all, there are political elements that may suddenly cause a reversal in some of the encouraging trends in the picture.

These encouraging trends have, of occurse, to be recognised. Our exports today are more varied now than they were a decade ago. The destinations of the exports have become wider; there is no longer that type of a 'single-buyer dominance' as we used to face. The imports also come from various sources. The commodity structure of the imports is more growth-oriented than it was in the past. India has never defaulted in the servicing of foreign debts and new grants and loans are still substantial. The reserves are large and, in fact, much larger than they appear to be, if the gold in the hands of the Reserve Bank is revalued at international prices, if the gold in the hands of the Government (at least 72 tonnes) is taken into account and if the foreign balances of the 'authorised dealers' (who are mostly in the government sector now) are also taken into account.

It is however the weaknesses that have to be watched carefully. Some of them are so strong that the advantageous positions reached may be turned into a critical one in a short span of time. The import bills can be substantially reduced only if alternative sources of energy are developed. Exports can be an assured element of strength if they depend less upon subsidies than upon economy in production costs, high-level quality control and efficient marketing. Tourist receipts of India can be substantial if attention is paid to the needs of the middle-income groups of foreigners looking for low-budget trips abroad. And, on the whole: it is necessary to make the accounts depend more on the contractual types of receipts than on uncertain unrequited remittances. Official foreign aid and private foreign aid in the form of remittances are good as long as they come, but in the long view, our balance of payments has to be built on firmed supports than these.

Restructuring.....

(Contiued from Page 21)

resist what Georgi Chicherin, who was the People's Commissioner for Foreign Affairs and the leader of the Soviet delegation at Genoa, in a letter to Lenin in 1922 described as "national egoism and predatory acts of the capitalist oligarchy". This demands a struggle on many fronts. On the one hand to reduce excessive dependence on the advanced capitalist countries we must develop collective self-reliance within the developing countries. Objective conditions for such an approach exist There are today several developing countries, including India, with a relatively high technological base. A pool of skills has also been developed in these countries. There are others who have acquired large financial resources, such as the OPEC countries We all have non-renewable resources which are in great demand in the developed capitalist countries and can be used as a bargaining lever if we move unitedly. Then we must also strengthen our economic relations with the Soviet Union and the socialist community on the basis of mutual benefit and on terms of equality and sovereignty.

We cannot, however, achieve success if we do not launch measures at home for radical economic, social and political structural changes. By retaining an unregulated or partially regulated market economy, backward agricultural relations and hence limited use of modern technology, unequal exchange between industry and agriculture, conspicuous consumption and waste of valuable resources inhibiting capital formation and growth with justice, it is impossible to build a new international economic order. We in India, and in many developing countries practice exactly the same vices which we accuse the advanced capitalist countries of using against us. By retaining injustice at home we cannot fight injustice abroad.

The time has indeed come for the varied dimensions, both economic and political, of the conclusion arrived at Havana to be understood clearly : "The struggle to eliminate the injustice of the existing international economic system and to establish a new international economic order is an integral part of the people's struggle for political, economic, cultural and social liberation." □

Maritime Flag and Registration of Ships

Need for Maritime Flag as the Rule of the Road

Nagendra Singh

EVERY UNIT of transport, a public carrier or a private one, irrespective of the fact whether it is operating on land such as a motor vehicle or on water such as a ship or in the skies such as an aircraft, has to bear an identification mark since an unidentifiable object of traffic would elude fixation of responsibility for its acts of omission and commission and thus defy maintenance of law and order particularly in the context of the sea which is not subject to the jurisdiction of the sovereign State. If the rule of the road necessitates an identification mark for every carrier with a view to orderly conduct of traffic, it becomes the responsibility of none other than the State itself both in the municipal and in the international sphere to register transport vehicles with a view to giving them the necessary distinguishing marks. Thus, registration of vehicles becomes an inescapable procedural agency once it is decided that the grant of identification marks is essential since their record has to be kept. In the maritime sphere too, the position is not different since sovereign States, members of the Family of Nations, are themselves responsible for the maintenance of law and order on the open sea and hence the duty to register and give identification marks to carriers on the high seas falls on the sovereign State itself.

An identification mark is a must for any unit of transport whether it is a motor vehicle, a ship or an aircraft since an unidentifiable object of traffic would elude fixation of responsibility for its acts of omission and commission and thus defy maintenance of law and order particularly in the context of the open sea which is not subject to the jurisdiction of the sovereign state. The eminent jurist, Dr. Nagendra Singh, in this article discusses various aspects of maritime flag and describes the maritime banner as an attribute of sovereignty.

The identification marks in the case of ships are three fold, viz;

(a) the number and the name of the ship visibly displayed on the outside plates in bold letters and

(b) secondly the maritime flag of the State which the vessel is asked to fly and,

(c) the "ship's papers" or documents and certificates which each ship must carry.

These aspects, the executive authority of the Government of every ship-owning State has to consider at the ceremony of registration of the ship. Though there may have been in the historical development of the idea of registration certain economic and political considerations, it would be correct to state that in the functional aspect, the need for the flag and the origin of registration do centre round the basic concept of a transport unit requiring some identification marks for the proper and efficient operation of the transportation system.

The importance of the flag to any ship sailing on any errand is indeed paramount. Both the case law and statute law or conventional and customary law remain clear as to the position when no flag, false flag or two flags are flown or even when a flag is changed :

(i) In the well-known case of the *Asya* (1948) A C. 351, it was ruled that a ship not sailing under the maritime flag of any State had no right to freedom of navigation.

(ii) Again, Article 6 of the Geneva Convention on the High Seas makes it clear that "ships shall sail under the flag of one State only and shall be subject to its exclusive jurisdiction on the high seas".

(iii) The importance of the flag and its direct connection with a State is such that "a ship may not change its flag during a voyage or while in a port of call".

(iv) Again, there can be no protection enjoyed by a vessel sailing under the flag of a State which has no maritime flag.

It may be emphasized, as said before, that the identification mark of the national flag is a necessity for the maintenance of public order not only on the high seas but also in port and harbours as well as while crossing territorial waters of maritime States of the world. The ship must be subject to some law which would govern the carriage of passengers and|or cargoes on board. It would defy all analysis and investigation if the identification mark of the flag did

Nagendra Singh is a Judge of the International Court of Justice, the Hague, Netherlands

not have on each and every ship which sailed out to sea.

The flag thus symbolises the legal regime of the ship on the seas and it does so principally for two reasons :

First, the flag determines the nationality of the ship and this in turn determines the national law which governs the ship;

Second, the flag determines the point of responsibility and how and where a right can be enforced in relation to that ship.

The maritime flag, being a matter of great legal consequence, the question arises who grants it and who determines what requirements are essential for the purpose of registration of ships and the simultaneous grant of the flag

Maritime flag—a Consequence of Registration of the Ship

As the flag is the direct result of the registration of the ship this essay would not appear to be complete without a brief mention of the law governing maritime registration which falls within the municipal jurisdiction of each State. As stated earlier, the law of nations, by custom, imposes a duty upon every State having ships owned by itself or by its nationals : (i) to insist on registration of all ocean-going ships and (ii) to provide by its domestic law the conditions to be fulfilled before its vessels could be registered to sail under its flag with the necessary distinguishing marks.

It may be mentioned at the outset, that registration of tonnage becomes necessary when :

(a) a new ship is first registered, having been built in the country or obtained from a foreign shipyard. This is known as the "first registry" of the ship;

(b) a second hand ship already registered elsewhere by a foreign national is acquired by a national to be registered again involving what is known as "flag transfer";

(c) the ownership of a ship is transferred by one national to another national. This does not involve flag transfer but it still requires certain entries to be made in the register.

It will be appreciated that flag transfer or flag hoisting is necessary in respect of (a) and (b) above but not in the case of (c) Though there is no international Convention governing the procedure of registration of ships and hence it is left to be regulated by the local law of the national State, the broad elements of State practice in this regard as stated earlier, are not much different. As an illustration, the procedural law of a big maritime State like the United Kingdom, and that of an under-developed country like India, may be briefly compared.

The procedure of registration of ships in the U. K. and India

According to the United Kingdom rules on the subject, the First or Initial Registry means the placing upon the register for the first time of any ship, British or foreign built, old or new. The requirements to be observed in regard to the First Registry of a ship are as follows :—

(a) There must be an application for registry made by the owner or his authorised agent.

(b) The name of the ship must be approved by the Minister or Transport.

(c) The ship must be measured and surveyed in accordance with the requirements of the Act.

(d) The owners must produce satisfactory evidence of title to ownership.

(d) The owner must be a person or a body corporate entitled to own a British ship.

(f) An official Number must be allocated and the ship must be carved and marked in accordance with the requirements of the Act. Every British ship must have a distinct Official Number appropriated to her, by which she may be known and recognised, irrespective of her name or other description.

(g) All fees must be paid.

(h) The registration establishes the ownership of the ship and hence all encumbrances thereto by way of mortgages have also to be registered.

The law in India follows the United Kingdom pattern inasmuch as the application for registry made by the owner or his agent under Section 26 of the Indian Merchant Shipping Act has to be accompanied by the following documents :

(a) the declaration of ownership;

(b) the builder's certificate, that is to say, a certificate signed by the builder of the ship and containing a true account of the proper denomination and of the tonnage of the ship as estimated by him and of the time when and the place where she was built. According to Section 27(1) of the Act, the owner or his agent who applies has to cause the ship to be surveyed or measured;

(c) if the ship has been purchased, the instrument of sale under which the property in the ship was transferred to the applicant;

(d) in regard to the name, number and markings of a ship, Section 28 of the IMS Act along with the rules framed by the Indian Ministry of Transport provide that ;

Marking on ships : Every ship shall, before registry be marked permanently and conspicuously to the satisfaction of the registrar as follows :

(i) Her name shall be marked on each of her bows, and her name and the name of her intended port of registry shall be marked on her stern, on a dark background in white or yellow letters or on a light background in black letters which shall be not less than one decimetre or four inches in height and 1.3 centimetres or half an inch in breadth.

(ii) Her official number and the number denoting her registered tonnage shall be cut in on her main beam.

(iii) Her scale of draught marks shall be cut or welded in feet and inches and in metres and decimeters in two columns side by side both forward and aft on the port and starboard side respectively.

The importance of the name, number and markings which are the distinguishing marks of the ship is further brought out by the fact that no change in the name or number is permitted without the Registrar's approval (rule 14), and any alterations in the dimen-

sions or specifications have to be brought to the Registrar's notice within one month of the date of occurrence (rule 15).

Common Ingredients of Registration

In short, therefore, the essential features of registration according to the United Kingdom and Indian laws are to ascertain, determine and fix :—

(a) the ownership of the vessel and to register faithfully all encumbrances, mortgages, etc. from time to time ;

(b) the exact type of the vessel with the dimensions and specifications for which the vessel is surveyed and measured and any alterations in the engine or hull are duly registered to keep account of the identity of the vessel ;

(c) distinguishing marks of the vessel by way of its name, number and draught marks so that its identity is once and for all fixed and known.

In fact the *raison d'etre* of registration is to keep the vessel identified throughout its operational life and hence any changes in its name, ownership, dimensions and specifications, markings such as number etc. have to be faithfully brought to the notice of the Registrar of Ships after the vessel has once been registered This aspect is amply provided for by the national law both in the United Kingdom and India.

It may be added that the procedural practices all over the world, whether in Panama or Poland, are basically the same as described above.

The Law of Registration

The law of registration of ships is to be found in treaty law howsoever meagre on the subject, and in the municipal enactments of the shipowning States of the world, and both these aspects are examined separately below :

(A) Treaty Law Concerning Registration

The first provision ever made on the law of registration, flag and nationality of ships in a multilateral convention was the result of the deliberations of the Law of the Sea Conference held in Geneva in 1958.

(i) The Convention on the High Seas (1958) which has since come into force states the function of registration and its relationship to flag and nationality in the following words :

Article 5

"1. Each State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag. Ships have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship; in particular, the State must effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag.

2. Each State shall issue to ships to which it has granted the right to fly its flag, documents to that effect".

(ii) I.L.O. Recommendation No. 108.—Again, the International Labour Conference which was held immediately after the Law of the Sea Conference, made a recommendation at its 41st Session on 29th April 1958 on Social conditions and safety of seafarers in relation to registration of ships. Though it is a recommendation and not an international Convention of the I.L.O., the details which it has pointed out in regard to the obligations implied by registration and the need for the effective exercise of jurisdiction and control of the country of registration for the purpose of safety and welfare of seafarers in the sea-going merchant ships, merit reproduction of the text of Recommendation No. 108 :

"Considering that labour conditions have a substantial bearing on safety of life at sea;

Considering that the problems involved have been brought into special prominence by the large volume of tonnage registred in countries not hitherto regarded as being traditionally maritime,

Considering that the Convention on the High Seas adopted by the United Nations Conference on the Law of the Sea and opened for signature on 29th April 1958 contains a set of provisions regarding

(i) the right of every State to sell ships under its flag ;

(ii) the condition relating to the nationality of the ship that "there must exist a genuine link between the State and the ship; in particular, the State must effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag" ;

(iii) the obligation that every State shall take such measures for ships under its flag as are necessary to ensure safety at sea with regard, inter alia, to the manning of ships and labour conditions of crews taking into account the applicable international labour instruments.

Considering the provisions of the Seafarers' Engagement (Foreign vessels) Recommendations, 1958, and

Considering the provisions of the Social Security (Seafarers) Convention, 1946 ;

The Conference recommends that the following provisions should be applied :

The country of registration should accept the full obligations implied by registration and exercise effective jurisdiction and control for the purpose of the safety and welfare of seafarers in its sea-going merchant ships and in particular should—

(a) make and adopt regulations designed to ensure that all ships on its register observe internationally accepted safety standards ;

(b) make arrangements for a proper ship inspection service adequate to the requirements of tonnage on its register and ensure that all ships on its register are regularly inspected to ensure conformity with regulation issued under (a) above ;

(c) establish both in its territory and abroad the requisite government-controlled agencies to supervise the signing on and signing off of seafarers ;

(d) ensure or satisfy itself that the conditions under which the seafarers serve are in accordance with the standards generally accepted

by the traditional maritime countries ;

(e) by regulations or legislation if not already otherwise provided for, ensure freedom of association for the seafarers serving on board its ships ;

(f) ensure by regulations or legislation that proper repatriation for the seafarers serving on board its ship is provided in accordance with the practice followed in traditional maritime countries ;

(g) ensure that proper and satisfactory arrangements are made for the examination of candidates for certificates of competency and for the issuing of such certificates."

The aforesaid indicates the numerous responsibilities which come to rest on the flag State.

(B) Municipal Enactments of States Governing Registration

As far as municipal enactments are concerned, there has been no uniformity in the conditions laid down by States on which merchant ships could be registered to fly the national flag. In this connection, extremely useful work has been done by the United Nations in compiling all the relevant municipal enactments of maritime States concerning registration and nationality of ships. This volume appears in the United Nations Legislative Series and is entitled *Laws Concerning Nationality of Ships*, wherein the municipal laws of 65 States are mentioned. It would be unnecessary therefore to attempt here a description of the municipal laws of all the individual States except to briefly bring out the disparity in State Laws which by itself creates a problem not only for the shipping industry but also in international law in regard to what ought to be the genuine link between the ship and the registering State.

The members of the maritime community of ship-owning States are divided into two opposing groups as far as the thinking on the subject of registration is concerned. One group believes in rigid law of registration which would firmly tie the ship to the registering State not only by construction in national shipyards and manned by captain and crew of its nationality but ownership also, being substantialy if not entirely national. There is, on the other hand, the group which believes in a relaxed law imposing no conditions for registration and permitting foreign nationals to register ships within the national territories almost on the same basis as its own nationals In between these two rival groups, as it were, there exists a middle of the road thinking on the subject which insists on ownership being in national hands on a majority basis but imposes no other conditions such as relating to crew or captain. This may be referred to as the balanced group. As it is not possible to state here the registration laws of all the maritime States, typical examples can be given from each group of States to help appreciate the magnitude of the diversity of the law on the subject :

(1) The Rigid or the National School

If only two countries were to be selected for typifying the laws of registration of the strictly national school of thinking, Portugal and the USA would appear to furnish the best examples :

Portugal

(a) Shipping Act of 8 July 1863

Part I. Nationality of Ships : Conditions of Grant of Nationality.

Article 1. The nationality of a Portuguese merchant ship shall be determined by :

1. Its construction or origin.
2. Its owners or operators.
3. Its captain and officers.
4. Its company or crew.

Chapter I : Origin of Ship

Article 2 : A merchant ship shall be Portugese only if built in Portugal.

Article 3 : A foreign or foreign-built ship shall, however, be Portuguese for all purposes —

1. If purchased by Portuguese nationals, provided that the tonnage duty established in the Decree of 11 August 1852 is paid and the ship is registered in accordance with the provisions of Article 4 of the decree ;
2. If lawfully seized and adjudged lawful prize ;
3. If ordeded by a court to be forfeited for a breach of law ;
4. If it belongs to a shipping or towing company established in Portugal and authorised by law.

Chapter II : Ownership of ships

Article 4 : A ship which though Portuguese-built does not belong entirely to Portuguese nationals or na'uralised aliens shall not be Portuguese.

1. A Portuguese ship transferred by a Portuguese operator to an alien shall cease to be Portuguese.
2. A non-naturalised alien who acquires a Portuguese ship by inheritance or otherwise gratuitously shall transfer it within thirty days, in default whereof, it may not be awarded to the informant.

Chapter III : Captain, Officers and Crew

Article 8 : The Captain or Master and the supercargo shall be Portuguese nationals or naturalised alines.

Article 9 : Unless otherwise prescribed b ytreaty, at least two-third of the members of the crew shall be Portuguese or naturalised aliens.

Part II : Evidence of nationality.

Article 10 : The Portuguese nationality of a ship shall be evidenced by the flag and ship's papers, which shall entitle it in a foreign port to privileges and exemptions accorded by treaty and on the high seas to due respect.

(2) The School of the Relaxed Law

There is a group of countries, with which the expression "flags of convenience" is associated, which permit registration of foreign-owned ships without any condition and often on the same basis as ships without any condition and often on the same basis as ships belonging to their own nationals. The law of registration of Liberia may be quoted to illustrate the thinking of this School.

Liberia

(a) *Maritime Code of* 18 *December* 1948 *as amended, 22 December*, 1949

Section 2 : Vessels eligible to be documented.

The following vessels are eligible to be documented :

1. A seagoing vessel wherever built, owned by a citizen or national of Liberia, or of any foreign country. The term "citizen" and "national" shall include corporations, partnerships and associations of individuals.
2. Any vessel of twenty net tons or over engaged in trading on the inland waters of Liberia.

Section 4 : Vessels not required to be documented. Any vessel of less than twenty net tons engaged solely in domestic commerce shall not be required to be documented.

Section 5 : The ship's document shall be called the "Certificate of registry".

(3) *The Balanced School*

This School believes in relying primarily on ownership to establish the genuine link between the State and the ship. The registration laws of the UK and India may be regarded as furnishing typical examples of this line of thought on the subject.

The United Kingdom

Qualification for owning British Ships

Merchant Shipping Act of 25 August 1894 (57 and 58 Vict. C. 60)

1. A ship shall not be deemed to be a British ship unless owned wholly by persons of the following description (in this Act referred to as persons qualified to be owners of British ships) ; namely,

(a) British subjects,

(d) Bodies corporate established under and subject to the laws of some part of Her Majesty's dominions, and having their principal place of business in those dominions.

India

Part V **Registration of Indian ships**

Merchant Shipping Act, 1958

For the purposes of this Act, a ship shall not be deemed to be an Indian Ship unless owned by persons to each of whom either of the following descriptions applies :

(a) a citizen of India ; or

(b) a company which satisfies the following requirements, namely—

(i) the principal place of business of the company is in India ;

(ii) at least two-thirds of the share capital of the company is held by citizens of India :

Provided that the Central Government may, by notification in the official Gazette, alter such minimum percentage, and where the minimum percentage, is so altered, the altered percentage shall, from the date of the notification, be deemed to be substituted for the percentage specified in this sub-clause ;

(iii) not less than three-fourths of the total number of directors of the company are citizens of India ;

(iv) the Chairman of the Board of Directors and the Managing Director, if any, of the company are citizens of India ;

(v) the managing agents, if any, of the company are citizens of India or in any case where a company is the managing agent, the company satisfies the requirements specified in sub-clauses (i), (ii), (iii) and (iv).

The following would reveal the diversity in regard to the conditions prescribed by States for national registration of ships to fly their flag. The main conditions are broadly confined to the following items :

(i) *Construction and origin of ships*

There are few States which lay down that ships built within their territories could alone be eligible for grant of nationality. Apart from Portugal, the USA insists on coastal ships being built in the USA but not the foreign going. This is an extremely difficult condition and not common to laws of States coming even within the rigidly national group.

(ii) *Captain, officers and the crew*

Captain, officers and the crew of the ship also constitute an important factor, prescribed by States for national registration of ships. In this regard, a number of States lay down that the captain and officers must be nationals of the registering State as they hold charge of the ship and furnish the link for enforcement of administrative control of the State over the ship. For example, States like Argentina, Italy, Brazil, Greece and the Netherlands in addition to the USA and Portugal, also insist on this condition. In regard to crew, however, various percentages have been prescribed, as for example, Greece insists on three-quarters of the crew being Greek subjects, whereas Portugal insists on two-thirds of the members of the crew being Portuguese. Chile is content with one-third of the crew being its nationals.

(iii) *Ownership of ships*

In this regard, while countries like the UK, the USSR, Germany, Japan, etc., would insist on exclusive national ownership, there are States like the USA content with fifty per cent nationality ownership in the case of foreign-going ships and seventyfive per cent ownership for coastal ships along with other conditions. India has a uniform law which applies to coastal and foreign-going ships alike and is content with sixty-six and two-third per cent in the case of corporate ownership and one hundred per cent in the case of individual ownership. Norway believes in only sixty per cent national ownership whether individually owned or by a Corporation.

In short, the law of registration of ships has a pattern which differs from State to State though the act of registration, to say the least is pregnant with far-reaching legal consequences, both national and international. Whatever may be the factors of registration constituting the rigid or laxed law on the subject, it is the act of the State to register a ship which alone confers the maritime flag and thus is of decisive importance in certain vital matters connected with the operation of the ship. The flag connotes the State, its jurisdiction, the national law, and indicates where responsibility lies for what aspect of a maritime matter. The most significant consequence is, therefore, the link which it forges between the State and the ship through the instrumentalities of the flag and the "ship's papers" and hence it is often said that the martime banner is an attribute of sovereignty. □

Reduction in Defence Expenditure

Vital For Building Up New Economic Order

V. K. Narasimhan

BY ANY TEST, it is not going to be an easy task to create a new international economic order, which meets the urgent demands of the developing countries for growth at a rate that will make up for the neglect and failures in the past, and which, at the same time, does not appear to the developed countries as making excessive demands on their own resources and the high standard of living already reached by their populations. The complex problems involved in reconciling divergent needs and points of view will have to be solved by a process of give and take which may possibly be spread over many years.

It has to be recognised that neither the internal situations among the developed countries nor the development needs of the developing countries are uniform or identical. For instance, the standpoint of creditor countries like Germany and Japan, with favourable balances of trade, is very different from that of other developed countries which are faced with external deficit. Nor can we ignore the problems created both for the developed and the developing countries by the continual rise in oil prices. In fact, one of the most serious problems that will face the world as a whole in the coming years is the energy crisis. The problem is in some respects, more serious for the developing than for the developed countries because they do not have the resources for developing alternative sources of energy, whether it be nuclear power or solar energy.

In the international conditions as we find them today, it is inevitable that every country will see the problems of international cooperation in terms of its own internal difficulties and needs. This means that the developing countries have to approach the problems of creating a rational cooperative new world economic order in a realistic spirit. They should have no illusions about what they can demand or expect from the developed countries, which, in spite of the wide gap between them and the developing countries, have their own grave internal problems.

V. K. Narasimhan is Editor, Deccan Herald, Bangalore

Above all, it has to be recognised the major tasks of development are primarily of an internal nature and no international economic order, however well designed, can serve as a substitute for the innumerable tasks which have to be carried out within the developing countries themselves.

India

Our experience with planning over the past twenty-five years shows how, in spite of accelerated rates of investment from one Plan to another, the rate of growth of economy has been uneven and in the years since 1966 it has been steadily on the decline. While seasonal factors affecting agricultural production may account for part of the variations in the rate of growth, it is clear from the evidence that other factors like indifferent management, wrong fiscal policies, unhelpful attitude on the part of labour are among the factors which have contributed to a lower rate of growth than what could and should have been achieved on the basis of the investment that was made. Nor can the influence of political factors affecting economic development be under-estimated. Political stability and reasonable certainty and continuity in economic policies are essential for achieving a steady rate of economic growth. It is not entirely an accident that during the period of the first three Plans when reasonable rates of growth were achieved, India had fairly stable governments at the Centre and in the States. It is the instability of governments since 1967 which has largely been responsible for the decline in the rate of growth during the past decade.

Mere Increased Assistance Not Enough

My purpose in underlining these internal factors is to indicate that a mere insistance on an increased flow of financial and technical assistance from the advanced countries is not enough to promote development in the developing countries or to narrow the gap between the developed and the developing countries. Five years ago, at the Conference of the United Nations Industrial Development Organisation (UNIDO) at Lima, a resolution sponsored by the Indian delegation was passed which urged that the share of the developing countries in the world's industrial production should be raised from 7 per cent in 1975 to 25 per cent by

2000 AD. The passing of this resolution was considered as a great victory for the developing countries. It was indeed a pyrrhic victory which meant nothing in reality for the developing countries. Nobody among the developing countries, not even the Indian delegation, had any idea how exactly it was proposed to increase the developing countries' share of the world's industrial production to 25 per cent, what demands such a target would make on the developed and the developing countries and whether this inordinately ambitious objective had any relation at all to the realities of what was happening in most of the developing countries including India. The Indian delegation hardly seemed to be aware of the implications of the steady decline in the rate of industrial growth in India from 1967. It seemed hardly conscious of the fact that the rate of industrial growth had declined from 7.4 per cent in 1969-70 to as low a figure as 2 per cent in 1973-74 and to 2.8 per cent in 1974-75. It is true that since then the rate of growth has picked up, going up to 6.1 per cent in 1975-76 and 10.4 per cent in 1976-77, but in the subsequent years, it has again shown a decline. In fact, in 1979-80 the rate may be barely 4 per cent. If this is the record in a country with a well developed infrastructure for industrial development, a large skilled labour force and adequate resources for the growth of basic industries, how can a high rate of industrial growth be expected in a large number of African and Asian countries which are lacking in many of the basic infrastructural facilities for growth ? To achieve the 25 per cent share in industrial production by 2000 AD, the developing countries as a whole would need more than a steady 15 per cent rate of industrial growth over 25 years, with the growth rate of the developed countries pegged around one per cent.

The truth is that since the Lima Conference, the gap between the developed and the developing countries has widened, except perhaps in the exceptional case of the oil exporting countries. It would be a remarkable achievement if by 2000 AD the developing countries achieve even a modest and realistic target of 15 per cent of the world's industrial production, which would represent a doubling of their share within the next two decades. Even this would call, on the one hand, for extraordinary and sustained internal efforts on the part of the developing countries and finanical and other aid from the developed countries on a large scale than what has been forthcoming in the coming years.

In this context, the debate on the shape of the new economic order should be based on realistic consideration of what such an order should seek to achieve and what the obligations of both the developed and the developing countries are in achieving these objectives.

Specific Commitments

I feel that it would be necessary to organise a summit meeting of the Heads of Governments of all the developed and developing countries at which the broad purposes of the new economic order should be spelt out and the specific commitments of both developed and developing countries over the next few years defined. It may not be easy to arrive at agreements at such a meeting, but without an accord reached at the highest level, the new economic order will remain a pious declaration of vague objectives which will lack substance because no country will be committed to action for achieving those objectives.

The principles that should govern the foundation of the new economic order have been indicated in the United Nations' resolution, which has stated that the new international economic order should be "based on equity, sovereign equality, interdependence, common interest and co-operation among all States, irrespective of their economic and social systems, which shall correct inequalities and reduce existing injustices, make up to eliminate the widening gap between the developed and developing countries and ensure steadily accelerating economic and social development and peace and justice for present and future generations". As an expression of lofty objectives this resolution is an eloquent declaration, but it is in drawing up the concrete measures by which these objectives can be achieved that the differences in approach and interests among the different countries will come to the surface.

India's Key Role in Resolving Differences

I feel that India has an important role to play in resolving these differences and promoting as far as possible compromise solutions and constructive co-operative attitudes among the developed and developing countries. India is in a unique position to do this not only because of the respect and goodwill it commands among the hundred odd developing countries but also because of the influence it can exert over the developed countries both in the western world and the communist block by virtue of its size and the part it has played in promoting the concept of co-existence. India has also another advantage, as a country with a large population and a fairly developed and diversified economy among the developing countries, in playing a mediatory role between the developed and the developing countries.

Above all, India has to give a lead in several important areas of international policy so that its commitment to the creation of the new international order will be clear beyond doubt. As a country with the third largest number of skilled scientific and technical personnel, India is in a position to help many less developed countries with technical assistance and know-how. Already Indian skilled personnel are operating in various spheres in the countries of the Middle East in building up their infrastructure and setting up new industries. In the lowering of trade barriers for the developing countries, India could set an example.

Reduction in Defence Expenditure Vital

A controversial area in which India may possibly give a significant lead is that of disarmament. All talk about building up a new international economic order based on "peace and justice for present and future generations" will sound hollow unless the leading countries of the world take effective steps to reduce their defence expenditure and divert the resources thus saved for assistance to the needy countries. Today the global expenditure on arms exceeds $350,000 million annually. It is difficult to believe that expenditure on this scale on lethal weapons is essential for the defence and security of the nations concerned. One of the deplorable aspects of the insane arms race is the employment of nearly one-half of the technical people in the world in jobs related to armament. The enormous physical resources used for this purpose could clearly be put to better use for promoting the welfare of millions of people who today live in squalor and poverty. India clearly can give the lead by offering to cut her defence expenditure and agreeing to the settlement of all her international disputes by international adjudication or arbitration. Sooner or later, the world has to be

rescued from the vicious grip of an arms race which is inflicting incalculable burdens on the world's population in pursuit of a national security which ought to be achieved by saner and less expensive means.

Marginal Sacrifices Essential

Today the total resources of science and technology available on a global scale are adequate to solve most of the problems of the developing countries if only the developed countries accept the marginal sacrifices they will have to make in the interest of narrowing the gap between the developed and the developing countries. Several international agencies attached to the United Nations or operating independently are engaged in making scientific studies of how various problems of the international community can be solved. Thus, we have, on the one hand, specialised agencies of the UN like the Food and Agricultural Organisation, the World Health Organisation and others, and on the other, agencies like the International Institute for Applied Systems Analysis in Vienna and the Swedish Institute for Peace Research in Stockholm. If the resources of all the agencies are properly mobilised it should be possible to find answers to most of the urgent problems of the developing countries in such areas as energy, mineral exploration, environmental pollution, urban development, water management and the like.

All the varied problems connected with the evolution of a new international economic order must be continually studied by a special group set up by all the economic ministries of the Government of India as well as the External Affairs Ministry. Such a group should be able to provide the Indian delegations to the appropriate international conferences with the data and the proposals which can be utilised for promoting India's initiative at these conferences. India has often tended in the past to go with the majority among the developing countries—'the group of 77'—instead of displaying its own initiative on matters where it could have played a distinctive role of its own. The result has often been to create a deadlock between the developed and developing countries, if not a confrontation. The interests of the developing countries will not be served by creating confrontational situations between them and the advanced countries. To imagine that by unity among the developing countries the developed world can be pressurised is a naive belief. We cannot create a genuine cooperative international economic order by adopting rigid or uncompromising postures in the debates between the developed and the developing countries. India, which is luckily free from ideological obsessions of any kind and which is a democratic country committed to the pursuit of progressive socio-economic goals, can act as the ideal mediator in international gatherings where divergent interests and approaches may come into conflict. □

21DPD/79—5

Dilemma of Technology Transfer

Bepin Behari

THE aspiration of developing countries to secure an international cooperative system culminated in the establishment of a New International Economic Order. Its establishment was declared at the 2229th Plenary Meeting of the General Assembly held on May 1, 1974. At this meeting, the members solemnly resolved to carry out the programme which would "correct inequalities and redress existing injustices, make it possible to eliminate the widening gap between the developed and the developing countries and ensure steadily accelerating economic and social developments and peace and justice for present and future generations". It was hoped that this declaration would be "one of the most important bases of economic relations between all peoples and all nations".

In order to ensure the application of the New Order, the General Assembly adopted a detailed action programme relating to (i) raw materials and primary commodities as related to trade and development, (ii) international monetary system and financing of the development of developing countries, (iii) industrialisation, (iv) transfer of technology, (v) activities of transnational corporations, (vi) economic rights and duties of states, (vii) cooperation among developing countries, (viii) exercise of permanent sovereignty of state over natural resources, (ix) strengthening the role of the United Nations system in the field of international economic cooperation, and (x) special programmes. This new international economic order was an expression of the determination of the world's highest organisation to evolve an integrated system of economic development; technology as an input for it being assigned considerable importance. The new order emphasized that the developing countries should be given access to the achievements of modern science and technology. Favourable milieu would be created for the generation of indigenous and incorporation of appropriate technologies. Activities of transnational corporations would be carefully regulated and supervised.

Commenting upon the importance of the New International Economic Order, the present Secretary General of the United Nations, Kurt Waldheim, observed that the non-establishment of the new cooperative partnership would widen the existing gap between the developing and the developed nations which would "increasingly represent a political threat to international peace and security". The essence of the New Order in view of developing nations was "the full and complete economic emancipation" and for the developed ones, "the survival and sustenance of their own existing standard and quality of living".

The detailed Programme of Action on the NIEO adopted by the UN General Assembly includes transfer of technology. In the process of technology transfer, the transnational corporations acquired great importance. They account for one-fifth of the world's output. Bepin Behari, in this article, discusses the role of transnationals in supplying technological knowhow to the developing countries.

Importance of Technology

The developed countries have taken great advantage of technological innovations and much of their progress depended upon science and technology. So far, the developing countires for their production growth have depended on increases in industrial inputs. Between 1950 and 1970, in the West European countries, the average annual rate of industrial employment expansion was 0.9 per cent, while the industrial output grew by 5.4 per cent which showed that the rate of growth of the productivity of labour was 4.5 per cent per year. In other words, the West European economy was growing mainly on the strength of advances in the productivity of labour which laws made possible as a result of technological progress. This situation must gradually be generated in the developing countries also if they wished to progress towards industrialisation. For this purpose, transfer of technology must be made very easy. But it is doubtful, as is evident from the two deliberations of UNCTAD on this subject, whether the advanced countries would permit it so.

Problems of Technology Transfer

The process of technological transfer is not easy : the imparting of traditional wisdom, and the development of native ingenuity, expertise and skill require highly developed scientific infrastructure and presence of high level of educational and scientific institutions. Implanting of foreign technology is also met with resistance in an alien land. The transfer of technology is such a complex process that it may more appropriately be considered more an innovative than an initative process. Lord Blackett rightly emphasized the technological transfer and diffusion as a cultural, social and political process and not just the imitation of manufatcures. "Given the inherent difficulties", Lord Blackett observed, "transfer and diffusion cannot be expected as a spontaneous process, but require institutionalised channels of acting". These channels go beyond merely an importation of machinery and equipment—new or second hand, and receipt of blueprints and designs and some training facilities in the operation of sophisticated machinery.

Technology for which the developing countries aspire is the mass of integrated system of industrialisation, motivation, strategy and processes found effective in advanced countries. It is that "intangible

Bepin Behari Deputy Secretary U.P.S.C.

factor of knowledge transformed into innovations" which presently account for more than 50 per cent of the growth in economic products in developed countries, which is zealously guarded by them, and which the developing countries cannot easily and productively absorb. Being intangible in nature, it is difficult to transfer.

Research and development is merely the first stage in the programme of technology generation. Later on, it is linked with marketing research, invention development design tooling, first production and marketing of the new product. These are all specialised operations requiring special skills and much arduous preparations. Often two to three decades lapse after the basic research is completed and the necessary transformation into productive innovations materialises. This shows that technology generation, even if it is programmed under the agies of the United Nations, will require establishment of highly specialised industrial structure as well as attainment of a radically different industrial culture. The ultimate objective of technology transfer is to provide the essential base for indigenous technology generation. Merely by importing foreign technology this objective cannot be achieved.

Payments for Technology

Further more, technology import requires payments for the same. Technology generation and industrial innovations are commercial ventures. In supplying any proven technology, the innovating party expects compensation and the recipient country is obliged to make payments for the same. In order to decide the equitable terms of transfer and the magnitude of payment for the same, the cost for generating the technology is to be assessed. Such an assessment is difficult. During the process of research and development, the proportion of successful investigations and of those basic researches which cannot be transformed into commercial innovation is usually very high. These are the hazards of the game. No agency which undertakes such a mission can be sure from the very beginning of the success. Even for the successful ones, the cost distribution for various stages of commercialisation is such that the recipient party often feels that the payments made for the final technology are more than the actual cost involved for the innovation. On the other hand, the supplier of technology would like to ensure that his long-term interests and recovery of costs are made possible. The balancing of the two sides requires careful adjustment of the interests of both sides.

New Order Suggestions

The new international economic order attempts to harmonize the interest of both the sides. The developed countries are in a strong bargaining position. The World Intellectual property Organisation (WIPO) estimated that the developing countries granted only 6 per cent of the patents registered in early 1970's; the world total amounted to 3.5 million patents. Of the total patents registered in the developing countries, only six per cent were taken by the nationals of these countries. This shows that the industrial technology originates mainly in the industrialised countries and the share of the developing ones is only marginal. In case payments are made for such technologies, the advanced countries will receive contributions for those transferred from them directly as well as for those which are patented by them in the developing countries. Technical knowledge being internationally considered property, any appropriation of the same without adequate compensation would be illegal. But howsoever liberal the terms of transfer may be, the payments either in the form of royalty or outright purchase would be colossal. To avoid the complications arising from the outflow of such a volume of resources, the inevitable way out is to generate one's own technology. Thus we arrive at square one. To eliminate this circularity the New Order declaration has laid down that all efforts should be made :

(a) To formulate an international code of conduct for the transfer of technology corresponding to needs and conditions prevalent in developing countries ;

(b) To give access on improved terms to modern technology and to adapt thaa technology, as appropriate, to specific economic, social and ecological conditions and varying stages of development in developing countries ;

(c) To expand significantly the assistance from developed to developing countries in research and development programmes and in the creation of suitable indigenous technology ;

(d) To adapt commercial practices governing transfer of technology to the requirements of the developing countries and to prevent abuses of the rights of sellers ;

(e) To promote international cooperation in research and development and the legitimate utilisaion of naural resources and all sources of energy.

Role of Transnationals

In the process of technology transfer, the transnational corporations have acquired great importance. Whether we consider the quantum of world's outputs volume of trade or the magnitude of technology generation, the multinationals account for a substantial share. They account for one-fifth of the world's output (excluding the centrally planned economies); their production in recent years has been growing at the rate of 10 per cent per annum which amounts to nearly twice the growth rate of the world output, and half as much as the world trade. The estimated level of their production exceeds 750 billion dollars a year, which is greater than the gross national product of any country other than the United States and their direct investment is about 300 billion dollars.

These corporations carry out much diversified activities; about 40 per cent of their direct foreign investment is in manufacturing activities, 20 per cent in petroleum industry, 7 per cent in mining and smelting, besides others. As far as their share in technology generation is concerned, it can be assessed from the fact that 70 per cent of the total research expenditure of the industrialised market economy countries is concentrated in the United States where large transnational corporations are responsible for half the private sector's expenditure on research.

Such a mighty force in international economic system cannot remain completely neutral. They are in a position to seriously and significantly affect the economic and political fortunes of developing countries. A careful regulation of their activities and monitoring of their impact could avoid such eventualities. Considering the significance of this situation, the United Nations in 1973 commissioned a study in-depth of the rise of multinational corporations and their impact on trade and development of other countries. The group

ted by L. K. Jha submitted its report in June 1974. The Department of Economic and Social Affairs of the United Nations also published a working group report on the subject. These reports emphasised the importance of transnationals and highlighted even their positive role in international economic development. They however, cautioned against their unrestricted growth and suggested careful regulations and safeguards. In anticipation of these findings, the New Order resolution stressed the need for formulating, adopting and implementing an international code of conduct. The relationship based on such a code was expected to harmonize the interests of all parties concerned. Of the various recommendations made in this regard, one may like to mention the following which aimed :

(i) To regulate their activities in host countries, to eliminate restrictive business practices and to conform to the national development plans and objectives of developing countries.

(ii) To bring about assistance, transfer of technology and management skills to developing countries on equitable and favourable terms, and

((iii) To regulate the repatriation of the profits accruing from their operations, taking into account the legitimate interests of all parties concerned.

Transnational's Positive Role

One of the favourable impact of transnational operations is their ability to generate appropriate technology suited to the special conditions of the developing countries. "An adequate supply of appropriate technologies" according to a Commonwealth Expert Group on New Order (1977), "lies at the heart of the process of structural transformation, specially in regard to leading sectors such as agriculture and industry". In evolving them, it is necessary to adapt modern technologies generated in developed countries to their own specific circumstances of factor proportions, socio-economic relations, market situation and institutional, industrial or other structures. The transnational corporations have the opportunity of generating technologies in advanced countries based on intensive research, try them in varying socio-economic and climatic conditions, and bear the risks of their commercialisation. This special advantage accrues to none else

International Data Bank

The transnationals are in a better position to supply technical information as well. Data relating to technology availability is difficut to obtain but the transnationals can help. The sources of industrial innovations have been increasing rapidly, and the communication channels for their dissemination are expanding fast. Even the number of scientific journals and reviews which were less than 100 at the beginning of the last century became 1,000 by the middle of the century, increased to 10,000 by 1900 and in 1960, their number grew to 100,000; it is expected that, if the trend continued, there would be 1,000,000 such journals by the end of the present century. In view of such a rapid growth of scientific knowledge, unless the developing countries have access to some reliable international source, their ability to choose the best suited technology and to strike the most favourable terms would be greatly restricted. A few years ago, the UNIDO started such a service under its Appropriate Choice of Equipment (ACE) programme but it has very limited coverage. For a few items based on the data supplied by half a dozen participating countries. the information is supplied to various institutions in developing countries. The New International Economic Order has recommended technological information data bank. It will be accessible to all countries. Such an information service could enable the developing countries to have the necessary data to make the crucial selection.

Indian Experience

The New International Economic Order requires the developing as well as the developed countries to orient their economic system and international relationships to fall in line with the suggestions made in the Declaration. Its impact on Indian developmental activities is yet to be assessed. But technology as a factor of production and an aid to employment generation is generally accepted here. The Rolling Plan 1978—83 show that the most serious lacuna in Indian Industrial planning was the lack of attention given to the employment implications of choosing technology. But for this orientation, the country has already attained a respectable status in industrial technology. The joint venture projects of Indian entrepreneurs and the expertise of Indian technicians in foreign countries have showed the technological capabilities of the country. It is in fact considered one of the few countries with adequate level of technological infrastructure. Consequently, transnationals and other oversea companies have at present only a limited role to play. They are permitted to establish themselves in the country only on special considerations. The scientific laboratories and the National Research Development Corporation of India deserve special commendation for generating and commercialising indigenous technologies. As a result of these efforts, the number of transnationals operating in the country has decreased. There were 540 branches of multinational corporations operating in 1973-74 in India which became 482 four years later. Except for drug industry and a few special consumer goods industries, their dominant share in the economy has fallen. As the foreign equity is not considered an essential requirement of the Indian economy, they are welcomed only if they bring technological know-how which cannot otherwise be available. In that case also, the extent of their equity participation is restricted and they are required to transfer their patent rights within a stipulated period of time. These conditions have greatly narrowed down the range of foreign investment in India. Existing foreign companies if they wished to retain foreign majority shareholdings are required to operate predominantly in technologically sophisticated areas, or reduce their equity participation to less than 40 per cent.

While increasing the indigenous technological capabilities India has been restricting the induction of foreign technologies in the country. Aside the Indianisation of component manufactures, the trade names are increasingly altered so as to reduce the impact of foreign goodwill : the Italian Fiat has become Premier Padmini, the American Quink has become Chelpark, Singer is doing business only through Meritt, and Coca-Cola is no longer available in India. With regard to payments for technology imports, attempts are made either to purchase them outright or to regulate royalty payments.

These are some of the steps which could have been easier and more smooth under the international code of conduct. But, the Indian condition cannot be considered as a typical one. The special status of India shows the possibility for every developing country.

(Contd. on page 46)

International Liqui
S.D.R's. Aid

V. K. R. V. Rao

What are S. D. Rs or Special Drawing Rights ? The instruments for financing international trade are predominantly the reserve currencies, such as dollars and sterling and gold. Dependence on the latter as the noted economist, J. M. Keynes pointed out, is an anachronism which had been successfully terminated as far as domestic currencies were concerned. The problem of depending on the former is that the supply of the currencies is regulated by their countries' balance of payments deficits or surpluses. Keynes had put forward the idea of one international currency to be called Bancor, regulated by a central institution. This idea was rejected on the grounds that it would generate inflation. But in July 1969, group of industrialised countries, popularly called 'group of ten' or 'Paris Club' agreed to establish Special Drawing Rights which are similar in principle to Keynes' original idea. SDRs, unlike currency earn interest those who hold them and get interest from those who use them.

COUNTRIES build up resources for meeting their balance of payments that may arise from time to time in the course of their trade and other transactions with the rest of the world. Before the advent of the I.M.F. they relied on gold, and freely convertible and therefore acceptable foreign exchange assets for the purpose, mainly in dollars and sterling. As this was leading to difficulties in maintaining exchange rates and taking recourse to restrictive practices in trade and allied matters, the IMF was brought into existence to help countries to secure temporary accommodation for meeting their payments imbalances. The IMF was financed by contributions from member countries in terms of gold and their own currencies according to quotas assigned to them on the basis of their likely requirements, which were calculated on the basis of a complicated formula that included G.N.P., imports, share in the world trade etc. This system ran into difficulties in the early sixties on account of shortages in gold supplies, and difficulties in obtaining dollars, as also the general problems involved in basing foreign exchange reserves on the basis of one or two reserve centres.

The world was facing a threat of shortage of international liquidity with its adverse effect on expansion of international trade, economic growth and employment. It was in this context that S.D. Rs were conceived of by the industrialised countries as an additional source of international liquidity administered by the IMF. SDRs could have been created on the basis of quotas of contribution with drawings unaccompanied by the usual IMF conditionality. But the discussions preceding its creation showed preference for a type of international liquidity that would not involve a transfer of real resources but have its effectiveness based on national guarantees of acceptance by participants for the adjustment of payments imbalances. This came to be the basis for the creation of S.D. Rs. Distribution of S.D. Rs. were on the basis of I.M.F. quotas without reference to the observed individual variations in national liquidity needs and were operated by a new department of the IMF, called the Special Drawings Rights Department. Hence the nomenclature, S.D.R. Allocations were credited to the participants and withdrawals debited to their individual accounts in this Department. All participants undertook the obligation to give convertible currencies in exchange for S.D. Rs. presented to them by other members to the tune of double their allocations, if they were designated to do so by the Fund. Participants had the right to ask the Fund to designate a transferee and the Fund had the obligation to do so. Interest was paid to the participants whose holdings exceeded their allocations, while it was paid by those whose drawings led to a dimunition of their holdings below their allocations. Thus a new type of international reserve asset was created that could be operated upon without conditionality and without involving the surrender of real resources by those who used this asset for settling their payment imbalances.

V.K.R.V. Rao, economist and founder-Director of Institute of Economic and Social Change, Bangalore.

S. D. Rs not an International Currency

S. D. Rs however did not constitute an international currency. Unlike currency, it earns interest for those who hold it and gets interest from those who use it. It can be used to get freely usable currency only from those who are designated for the purpose by the Fund and there is a ceiling on the extent to which the designated participant can be asked to give freely usable currency in return for S.D. Rs. At the same time, it was not just a credit facility, as the user does not select his partner in this exchange nor are any conditions laid down for his seeking this exchange, nor is he obliged to return the currency he gives to the participant from whom he got it. Thus S.D. Rs constitute a unique instrument for settling balance of payments commitments which is neither international money nor international credit facility

in the accepted sense. Its attractiveness lies in its availability without surrender of real resources, absence of conditionality in its use, and absence of any obligation for repayment. Thus S.D. Rs constituted a non-repayable long term facility for meeting international payments but subject to payment of interest by those who used it and involved neither tied purchases or other strings affecting national autonomy.

Obviously, S.D. Rs. could constitute an ideal form of aid to developing countries, superior not only to bilateral aid but also multinational aid channelled through international organisations like the World Bank, I.D.A. and other specialised U.N. Agencies. It is therefore not surprising that, from the outset, developing countries started viewing S.D.R. as an aid instrument for development assistance and wanted a link to be established between S.D.R. and Aid.

The industrialised countries however did not visualise S.D.R. as anything more than an instrument for additional international liquidity to be available to member countries on the basis of their trade requirements as conceived in the allocation of subscription quotas to the I.M.F. at the time of its establishment. Hence the acceptance by I.M.F. of the allotment of S.D. Rs to member countries on the basis of their quotas. Obviously this meant that the lion's share of S.D. Rs went to the industrialised countries with the less developed world getting only about a quarter of this long-term facility. In distributing S.D. Rs according to I.M.F. quotas it was conveniently forgotten that these constituted a liquidity facility vitally different from normal I.M.F. credits not only in respect of absence of conditionality but more importantly in respect of absence of either prior surrender of real resources or subsequent repayment in terms of real resources. An internationally cost-less reserve asset has thus been used to give more to those who have more and less to those who have less.

Committee of Twenty

The gravity of this action has assumed more serious dimensions with the fresh allocation of S.D. Rs. worth 12 billions for the three-years period, 1979-1981. When the initial allocation of S.D. Rs. 9 5 billions was made for a three year period, 1970-1972, the world had not yet taken up the question of international monetary reforms. It was the global currency crisis of 1971 with the delinking of the dollar with gold and the events that followed precipitated the question of international monetary reform and led to the appointment of the Committee of Twenty by the I.M.F. This Committee took note of the expressed desire on the part of many of its members to establish a link between S.D.Rs and Aid and, while unable to come to an agreement on the subject, left it for decision by the successor body they suggested for carrying on with the work of completing the reform of the international monetary system. This body was an Interim Committee of the Board of Governors of the I M.F., and it was directed to reconsider the possibility and modalities of establishing an S.D.R.-Aid Link. The Committee of Twenty further asked the Executive Board to prepare a draft amendment to the Articles of Agreement on the proposal to authorise the Fund to implement a link between development assistance and S.D.R. allocation for the Interim Committee and possible recommendation at an appropriate time to the Board of Governors. In fact, the Committee of Twenty agreed that the reformed monetary system should contain arrangements to promote an increasing net flow of real resources to developing countries to promote their economic development and, if these arrangements were to include a link between development assistance and S.D.R. allocation suggested two alternative forms in which this could be done. These were, subject to the total volume of S.D.R. allocation being determined exclusively on the basis of global liquidity needs,

(a) direct distribution to developing countries of a larger proportion of S.D.R. allocations than they would receive on the basis of their share in Fund quotas,

or

(b) direct allocation of international and regional development finance institutions of a predetermined share of S.D.R. allocations.

And yet the link finds no place either in the Second Amendment to the Articles of the I.M.F., nor in the distribution of the fresh S.D.R. allocations of 12 billions for the three year period 1979-81.

With this fresh allocation, the volume of S.D.Rs goes upto 21.5 billions. And in view of the demonetisation of gold and the declared resolve of the I.M.F. to make S.D.R. the principal reserve asset of member-countries, further allocations of S.D.Rs are likely to follow and thus increase the total volume of S.D.Rs in the international monetary system. And if these allocations were to be distributed on the basis of I.M.F. quotas, it would further aggravate the injustice already inflicted on the developing countries by the previous allocations of this cost-less reserve asset.

The criterion of global liquidity in terms of inadequacy as the justification for fresh issues of S.D.Rs has now been practically given up in practice by the fresh allocations made for the three year period 1979-1981, though it still continues to exist on the statute book of the I.M.F. This is clear from the press conference given by the Managing Director of the Fund in September 1978 when announcing the decision to make this fresh allocation of S.D.Rs. He then drew a distinction between global *need* and global *shortage* of liquidity and asserted that behind this fresh issue of S.D.Rs there was the understanding reached in the I.M.F. that there is presently a long-term need for liquidity. What he meant was that the Fund was dissatisfied with the present form of reserve creation by the deficit in the United States balance of payments and easiness of the Euro-markets and the way in which increasing reserves also often meant increasing the indebtedness of the countries that rely on external borrowing. In other words, issue of a fresh allocation of S.D.Rs was being justified not on the basis of its meeting a global shortage in liquidity but because of the contribution it could make to altering the composition of national reserve assets in disfavour of the existing dominance of foreign exchange assets denominated in selected currencies, especially the dollar.

Substitution Account

It is in this context that attention in the IMF has been revived in the creation of a Substitution Account that would reduce the volume of national reserve assets in foreign exchange by giving facilities for their conversion into S.D.Rs. Thus the Interim Committee, in the communique it issued following its meeting on March 7, 1978, stated:

"The Committee considered a report by the Executive Board on an Account, to be administered

by the Fund, that would accept deposits of foreign exchange from members of the Fund on a voluntary basis in exchange for an equivalent amount of S.D.R-dominated claims. The purpose of such an Account would be to take a further step toward making the S.D.R. the principal reserve asset in the international monetary system. There was broad support in the Committee for active consideration in the Executive Board of such an Account, and the Executive Board has been asked to present its conclusions to the next meeting of the Committee."

The staff of the Fund are now busy preparing discussion papers on such a substitution account. In fact, the first discussion paper was discussed by the Executive Board of the Fund at their meeting on May 2, 1979 and a second paper has been prepared in the light of the many suggestions thrown up at this meeting.

The S.D.Rs that will emerge from the proposed Substitution Account would differ from the S D.Rs in the Special Drawing Rights Department of the Fund in two vital respects, namely,

1. Unlike the existing S.D.Rs., those proposed to be created in the Substitution Account will not be held by all members, as S.D.Rs in this account will be held only by such members as are willing and able to give the Account an equivalent value in terms of deposits of acceptable foreign exchange. It is most unlikely that members belonging to the less developed and least developed among them will be either willing or able to participate in the proposed Substitution Account.
2. Unlike the existing S D.Rs those created under the Substitution Account will involve surrender of real resources by those who choose to participate in the scheme. But interest will be paid on the S D.Rs thus acquired, and this will include an extra return based on the difference between the interest paid on the S.D.R. and the income received by the Account on the foreign exchange deposits received by it in exchange for the S D Rs.

Disadvantages

In effect, the Substitution Account will only result in the developed countries and the oil exporting counttries increasing their S D.R. holdings, while the less developed and least developed countries of Asia, Africa, Latin America, and the Middle East will be left with their existing small holdings of S.D Rs. The Substitution Account, if operated on the lines of the present thinking in the Fund will thus only stabilise, if not magnify the existing inequitable distribution of reserve assets between the developed and the developing countries, and also among the developed countries themselves. While it will undoubtedly increase the role of the S. D. Rs. in the international monetary system, it will also jeopardise the chances of future allocations of S.D.Rs on the old basis which gave some relief to the less developed countries. It will also kill for ever any chance of a revival of a link between S.D.Rs and Aid, as the new S.D.Rs. will involve surrender of real resources and thus neutralise the plea for an S.D.R-Aid Link on the ground of its being a cost-less asset that should in equity be given to the less developed countries rather than to the developed countries. It would also go against the decision of the Ministers of the Group of 77, adopted at their last meeting held in Arusha, Tanzania, regarding the establishment of a long-term facility for financing purchases of capital goods by the developing countries that would also help to establish a link between S.D.R. allocations and development assistance. This decision taken at Arusha has been taken note of by the Ministers of the Intergovernmental group of 24 (representing the less developed world) in their communique issued on March 6, 1979. While these Ministers welcomed the decision of the Fund's Executive Board relating to further uses of S.D.Rs and urged the adoption of measures to enhance the role of the S.D.R as an international asset, they also welcomed the reduction from 30 to 15 percent of the reconstitution obligation and stressed the need for its complete abolition. It is clear therefore that what the Committee of 24 had in mind in urging an enchanced role for the S.D.R. as an international reserve asset was the S.D.R. as they then knew it, with its absence of prior surrender of real resources and subsequent return of real resources. Their support for S.D.Rs should not therefore be taken as support for the S.D.Rs that will be created in the Substituting Account against surrender of real resources in foreign exchange deposits of equivalent value. It is well therefore that the Ministers of Finance of the Group of 77 have agreed to meet in Belgrade before the annual meeting of the IMF/IBRD in order to discuss proposals for an effective reform of the international monetary system and presumary this discussion would include S.D.R.-Aid Link, the creation of S.D.Rs in the Substitution Account, and prospects for further allocation of S.D.Rs in the Special Drawing Rights Department of the Fund beyond the amounts allocated for 1970-72 and 1979-81.

This is the occasion when the developing countries should take a positive attitude in clarifying their long-held support for the S.D.R. as a major international reserve asset. The S D.R. should not be treated as an instrument for bailing out the developed countries which have an over-hang of large foreign exchange balances or of the countries whose currencies are held in these balances. Nor should it be used as an instrument for perpetuating the existing maldistribution of international liquidity among the members of the I.M.F. Without the support of the developing countries, the I.M.F would not be able to incorporate the Substitution Account among its operations. At the same time, there is no doubt that the industrialised countries, which are now getting actually aware of the dangers attending their current accumulation of foreign exchange reserve assets even by resorting to indebtedness and the unwillingness of the surplus industrialised countries to expand their imports or otherwise liquidate their surpluses are going to try hard for the establishment of the Substitution Account in the hope that some how it will help to restore health to the international monetary system whose sickness is primarily the result of the acts of commission and omission of the industrialised countries themselves. There will therefore be bargaining at Belgrade meeting between the developed and developing countries on the establishment of the Substitution Account based on surrender of real resources for the allocation of S.D.Rs., the future of the S.D.R. allocations which require no such surrender, and the establishment of a link between such S.D.Rs. and development assistance.

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Trade and Aid in NIEO

K. S. Mehra

ONE OF THE crucial elements for a New International Economic Order is establishment of an Integrated Programme for Commodities (IPC). The underlying idea behind the latter is to set up arrangements and to develop appropriate mechanism conducive to bringing about a measure of stability and other improvements in world markets for raw materials and primary commodities.

Since trade in primary products—foodstuffs and raw materials consitutes by far the preponderant part of the exports of the developing countries as a group, that part of the demands for a New International Economic Order that is concerned with a so-called integrated commodity policy is quantitatively by far the most important of the demands of the developing countries and if implemented, would involve the most far reaching changes in the system not only of international trade but of domestic resources organisation in both the developed and the developing countries.

Therefore, after a great deal of deliberations, it was in UNCTAD IV at Nairobi that Resolution 93(IV) on Integrated Programme for Commodities was adopted. It was unanimously approved that instead of solving commodity agreements by commodity approach, UNCTAD IV pleaded for the integrated programme for commodities to deal with the cyclical fluctuations, of prices and the resultant adverse terms of trade of the developing countries.

The above Integrated Programme for Commodities has four general suggestions :—

(i) To encourage more orderly conditions in general in commodity trade, both with regard to prices and the volume of trade, in the interest of both producers and consumers.

(ii) To ensure adequate growth in the real commodity export returns of individual developing countries.

(iii) To reduce fluctuations in export earnings and

(iv) To improve access to market of developed countries for developing countries' exports of primary and processed products.

These are re-stated in relation to commodity arrangements as under :—

(a) Reduction of excessive fluctuations on commodity prices and supplies, taking account of the special importance of this objective in the case of essential foodstuffs and natural products facing competition from staple prices substitutes.

(b) Establishment and maintenance of commodity prices at levels which in real terms are equitable to consumers and remunerative to producers.

(c) Assurance of access to supplies of primary commodities for importing countries.

(d) Assurance of access to markets, especially those of developed countries, for commodity exporting countries.

(e) Expansion of the processing of primary commodities in developing countries.

(f) Improvement of the competitiveness of natural products vis-a-vis synthetics.

(g) Improvement of the quantity and reliability of food aid to developing countries in need.

Priority is to be given to seventeen commodities of importance to developing countries in international trade, covering three quarters of their exports from their agricultural and mineral sectors (excluding petroleum), and particularly to ten "Core Commodit es" (Cocoa, Coffee, Tea, Sugar, Hard Fibres, Jute and manufactures, Cotton, Rubber, Copper, Tin).

The specific proposals of the Secretary General of UNCTAD for International Action in this regard are as follows :

(a) The establishment of a common fund for the financing of international stocks.

(b) The setting up of a series of international commodity agreements.

(c) The negotiation of other measures necessary for the attainment of the objectives of the programme within the framework of international commodity agreements.

(d) Improved Compensatory Finance for the maintenance of stability in export earnings.

It may be pointed out that the Common Fund is crucial to the whole policy, the main reason given for it being to encourage the development of stocking schemes by assuring finance. The total sum mentioned is $3 billion, $1 billion of capital and $2 million loans. It is often suggested that the Common Fund would need less finance than the aggregate of the individual stocking schemes.

The first session of the negotiating conference on Common Fund was held in Geneva from March 7 to April 2, 1977, but no firm decision could be taken on its establishment. Nevertheless, it was only in the Conference on the International Cooperation in Paris that the developed countries agreed in principle to set up a Common Fund. The second Session of the Negotiating Conference of the Common Fund was held in Geneva from November 7 to December 1, 1977. But the Conference had to be suspended due to the differences between developed and the developing countries. Subsequent to the suspension of the Negotiations, a series of informal and formal consultations were held to pave the way for resuming the negotiating conference.

K.S Mehra is Senior Research Officer, Planning Commission

It may be pointed out that the progress in regard to implementation of the Integrated Programme for Commodities has been rather slow but agreement on the key elements of the Common Fund had now been reached in March 1979 and there is now a hope that the Articles of Agreement of the Fund will be adopted at the next session of the Negotiating Conference to be held shortly. However, progress towards the establishment of international agreements on individual commodities has been less satisfactory.

Protection'sm

The problems posed for developing countries by intensified protection was one of the principal issues discussed at UNCTAD V at Manila and measures to check growing protectionism is an important ingredient of the NIEO.

Since 1974-75 industrialised countries have been resorting more and more to protectionist measures. Industralised countries have erected trade barriers of one type or the other. Thus all varieties of textiles products including garments, electronic items, light engineering, labour intensive products, leather items including footwear and the like have been subjected to trade barriers of one type or the other in practically all the industrialised countries. Restrictions imposed by the developed countries are of two broad categories : (a) Restrictions within GATT framework and (b) Restrictions outside the GATT framework. These protectionist devices have led to reduction in world trade thus affecting production and employment in developing countries.

It may be pointed out that to the extent the protectionist measures adopted by the industrialised countries adversely affect the exports of manufactured items, the growth of the manufacturing sector in the developing countries would be adversely affected, thus giving a setback to the industrialisation efforts of the developing countries. Also, it affects the overall growth rate as a result of the inadequate growth of the manufacturing sector as also of shortage of export earnings of these countries.

Therefore, there is a wide appreciation of the dangers of the current protectionist wave. Almost all concerned are prepared to admit that what has been happening is eventually going to affect both the developing countries, as well as, the developed Hence steps have been proposed at the international lev to stop the menace of protectionism.

But the progress in this regard has been extremely disappointing Even in the recently concluded multilateral trade negotiations (Tokyo Round) the Third World countries have been left out almost on the limb. The generalised scheme of preferences which was introduced a decade ago by Australia and adopted in the 70s by EEC/EFTA, Canada, Japan and later on by the U.S has also not significantly helped to increase the access to the exports of developing countries' products and manufactures.

In this regard three principles have been enumerated. Firstly, departures by developed countries from agreed provisions on the principle of standstill on the imposition of new barriers to imports from developing countries should be subjected to such measures as consultation and multilateral surveilliance. Secondly, non-reciprocal and preferential treatment should be accorded to developing countries in such trade negotiations. Thirdly, a set of equitable principles and rules regulating restrictive business practice adversely affecting international trade should be negotiated.

It may be pointed out that the progress in regard to implementation of the above principles has been rather slow.

In building up NIEO it is essential that improved access to markets in developed countries should be given to the exports of developing countries through the progressive removal of tariffs and non-tariffs barriers and of restrictive business practices.

Aid

The Resolution on the New International Economic Order, inter-alia, stipulated arrangemen's to promote an increasing net transfer of real resources from the developed to the developing countries.

Political and economic events of the past few years have greatly affec'ed both the need for capital transfers to developing countries and the conditions under which they are supplied. The economic crisis of 1973-74—the main features of which were the rise in oil prices, recession in the OECD countries, and worsened terms of trade for all impor'ers has greatly increased the demand for capital flows to cushion the adjustment of the developing countries to new trading conditions.

At various international forums the industrialised countries had been holding out great promise of aid and technical assistance. But the performance in this regard has been very poor. The quantum of net official assistance from OECD countries has been declining in recent years and amounts at present to one-third of one per cent as against the target of 0.7 per cent and one per cent which had been adopted earlier.

Discussions have, however, taken place in various forums since the idea in regard to NIEO was first conceived in 1974. Certain differences between the approach of developed and the developing countries have narrowed down during this period But much more serious efforts will have to be made both by developed and the developing countries to arrive at constructing decisions in this regard. All concerned have to realise the mutuality of the interests involved. Here it is to be noted that the General Assembly at a Session held recently on December 14, 1979 has unanimously decided to launch a new round of global negotiations on the key economic issues at a special session of the Assembly to be held in 1980 The problems to be tackled at the negotiations will include raw materials, energy, trade, development, money and finance. We hope that the early Eighties will see the fulfillment of the aspirations in regard to the New International Economic Order. ☐

Dilemma of Technology Transfer

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The private sector industries in India are very unhappy about the restriction imposed by the Government. This indicates the internal resentment against regulations of technological import. The conflict between the individual and the national interests is also to be resolved. The Indian experiment is one way of tackling the problem Other developing countries may secure these advantages, to a great extent, under the New International Economic Order. But the acceptance of the international code of conduct by the transnationals and the developed countries is yet a major hurdle to overcome. Unless this happened, the original dilemma facing the world would continue to prevail. ☐

India's Foreign Trade

G. Ramachandran
J. Rajeswar Rao

THE NIEO is an imaginative approach and constitutes bold initiatives to deal with the current world economic problems. The fundamental objective of the New Economic Order is to bring about a new equilibrium in international economic relations based on the cardinal values of justice, economic interdependence and universal human dignity.

The trade aspects of the NIEO programme relate to: "just and equitable relationship between the prices of raw materials, primary products, manufactured and semi-manufactured goods exported by the total outstanding disbursed debt of developing countries was about $ 300 billion. Thus, in the process, the burden of readjustment to the global economic crises had to be borne by the developing countries in a highly disproportionate manner.

The economic growth rate in the developing countries, has been markedly lower than in the middle income and industrialised countries. It has become evident that economic development in the third world cannot be accelerated or even maintained at the current inadequate rate without a fundamental restructuring of the existing international economic order which has to be made supportive of the development process.

The NIEO calls for reordering of the prevailing structures of world commodity markets, the pattern of trade etc. The NIEO programme stresses the need for just and equitable relationship between the prices of raw materials primary products, manufactured and semi-manufactured goods exported by the developing countries and the prices of raw materials, primary commodities, manufactures, capital goods and equipment imported by them. The authors, in this article, have attempted to throw some light on the essential elements constituting the trade related aspects of NIEO programme with a view to evaluate their impact on India's foreign trade.

developing countries and the prices of raw materials, primary commodities, manufactures, capital goods, and equipment imported by them with the aim of bringing about sustained improvement in their unsatisfactory terms of trade and the expansion of the world economy". The need for change in the existing patterns of production and trade emerges from the varying degrees of comparative advantage between the developed and developing countries. Resolution 3202 (S-VI) of the General Assembly has further outlined the programme of action. In the field of trade, it is concerned with tackling fundamental problems of raw materials, primary commodities and measures for the amelioration of terms of trade of developing countries.

The volume of world trade which, during 1963—73, grew by nearly 9 per cent a year fell to 4-1/2 per cent during 1973—78. There has been a serious deterioration in the terms of trade of developing countries amounting to almost 15 per cent over the period 1974—78 representing, in 1978, a foreign exchange loss for all developing countries of over $ 30 billion, with the result, many developing countries have had to incur high external payment deficits. It is estimated that the

G. Ramachandran is a Deputy Secretary and J. Rajeswar Rao is a Senior Research Officer, in the Ministry of Commerce, and Civil Supplies, Government of India, New Delhi. The views are that of the authors.

This would, *inter alia*, call for a proper recognition and appreciation by the developed countries of the need of restructuring their economic relations with the developing countries. The developed countries apparently believe that the solution to their current economic problems lies in tackling their own cyclical phenomenon which would through "trickle down effects" automatically help the growth process of developing countries. But in the world economy which is well integrated economic recovery cannot be achieved independently of the structural reform of the international economic system and poverty in any part of the world economy obviously becomes a threat or set back to the prospehity.

Commodity-Trade

According to the World Development Report, 1979, the primary commodities in 1976 accounted for 35 per cent of the total merchandise exports of developing countries. Sixtyfive per cent of these primary exports were purchased by the industrialised countries. This indicates the excessive dependence of the developing countries particularly the economies whose trade is based on an extremely narrow range of commodities, for their industrialisation and development.Nonetheless, it would be true also, although to a lesser extent of developing countries' like India which have a fairly

diversified production/export structure, yet are based on commodity sector which contributes significantly to the export-trade and offers scope for substantial earnings.

Indexation of Prices

In a way, the Integrated Programme for Commodities, provides for some sort of indexation of export prices and export incomes. One of the measures contemplated relate to the establishment of pricing arrangements taking into account, *inter alia* movements in prices of imported manufactured goods, exchange rates, production costs and world inflation. In other words, the objective is to secure improvement in prices in real terms through establishment of some sort of a link between the prices of developing countries' exports and the prices of their imports from developed countries. But there has been no attempt or progress in giving shape to the idea of improvement in prices in real terms However, India is trying to evolve a link between the prices of its major exports with the prices of imports of POL products on the lines of indexation, taking the recent suggestions by Iraq, into consideration.

The Stabex Scheme

The idea of compensation for short-falls in export incomes is not new The European Economic Community has been operating a system-STABEX-under the Lome Convention, for compensating short-falls in the export earnings of the developing countries from African, Carribean and Pacific regions The scheme is based on the criteria i e , the dependence threshold of these countries on the commodities concerned and the trigger mechanism which would attract the facility, are such that it would not be of interest to developing countries like India with a somewhat diversified export structure At the same time, the importance of sustaining a steady growth in export incomes cannot be minimised. An appropriate compensatory mechanism would have to be devised to cover the diverse situations of developing countries. There is a provision in the Integrated Programmes for 'improvement and enlargement of compensatory financing facilities for the stabilisation, around a growing trend of export earnings of developing countries'. These measures could contribute to maintaining the purchasing power of the export earnings of developing countries, provided the compensatory finance is related to shortfalls in export incomes in real terms. At UNCTAD—V held in Manila in May, 1979, a Resolution was adopted requesting the Secretary-General of UNCTAD, in consultation with the IMF, to prepare a detailed study of the operation of a new facility to compensate shortfalls in earnings from exports of individual commodities which would be complementary to other facilities and which would 'provide adequate compensation in real terms to developing countries' Really speaking, compensatory finance is less relevant to development since such assistance makes less of a contribution to structural economic changes. Nevertheless, the compensation for shortfalls in export earnings would greatly help in maintaining the pace of development provided such compensation is computed, taking into account the world inflation factors etc.

A poor Asian country cuts back its development plans when export prices for its main commodity collapse......

Trade in Semi-Manufactures and Manufactures

The concept of structural change in the sphere of international trade would very much imply and call for shifts in the patterns of world trade and production in semi-manufactures and manufactures. This would have great relevance for the rapid industrialisation of developing countries which is the central factor for the development and transformation of these countries. The World Bank analysis shows that manufactures category is the fastest growing and is likely to supply the bulk of total export growth in future. It is, therefore, of great importance that this area of international trade for developing countries receives adequate attention.

Trade in manufactures|semi-manufactures is very much inter-linked with their production. It has been recognised by the developing countries that both an expansion of production and diversification of international trade in manufactures and semi-manufactures is necessary for the attainment of accepted goals for their accelerated economic industrial development. The second General Conference of UNIDO in Lima in 1975 adopted a bold and ambitious target of 25 per cent share to be reached by developing countries. The developing countries have agreed that the increased share in manufactures should also (in consequence) be reflected in a corresponding increase in the share in world trade of developing countries which should account for 30 per cent of the world trade in manufactures by the year 2000. It has been recognised that major restructuring of production and trade based on the evolution of a new international division of labour is essential to achieve these objectives.

In the task of restructuring the mutuality of interest involved between the developed and developing countries has to be appreciated so that the process of shifts in production and trade is facilitated. Even as of now, as indicated in the World Development Report 1979, the industrialised countries are the most important markets for the manufactured exports of developing countries, absorbing over three-fifths of the total in 1976 In the same year the developing countries purchased, 28 per cent of total merchandise exports of industrialised nations and 31 per cent of their manufactured exports. This situation would clearly bring out the inter-dependence in trade and its implications for each other's progress. In this background economic prudence would dictate the adoption of a bold approach to the major questions involved in such structural changes namely the capacity of the existing international economic system to accommodate the required shifts and the adequacy of the existing policies and institutional arrangements to facilitate such structural changes.

Protectionism

A major problem to structural changes has been posed by the protectionist trends in the developed countries in recent years, which are working mainly against the low cost imports of manufactures from developing countries. It is feared, that this protectionism is not a temporary phenomenon arising from cyclical factors but seems to be more deep rooted in the underlying mal-adjustments in the world economy, reflecting the inability of the developed countries to restructure their industrial sectors in keeping with the evolving

competitive position of different trading partners. It is significant that UNCTAD V looked at the problem of protectionism in the context of structural adjustments and adopted a Resolution deciding to entrust the Trade and Development Board to organise in an appropriate existing body an annual review of the patterns of production and trade in the world economy. It is expected that such reviews should take into consideration relevant available information including general policies in order to provide a comprehensive factual and analytical background of global trends of production and imports and exports in the light of the dynamics of comparative advantage. National Governments are also supposed to take such reviews and in general recommendations flowing from them will be taken into account in the development and the strengthening of the policies which would encourage the re-deployment of the industries which are less competitive This paves the way for the structural adjustments in the developed countries and a higher degree of utilisation of natural and human resources in the developing economy. Another important aspect of this Resolution is that it has invited GATT to examine in an approprite body in case of future protective action by the developed countries against imports from developing countries.

Despite the developments mentioned we still lack positive steps and institutional mechanism to facilitate and encourage such re-structuring. UNIDO has provided for a system of sectoral industrial consultations to facilitate achieving of the Lima goals in respect of industrialisation of the developing countries. But there is no system of consultations available for facilitating re-deployment of industrial capacities in developed countries. At UNCTAD V efforts were made to provide for the undertaking of negotiations within the UNCTAD framework to formulate on a sectoral level in co-operation with UNIDO and ILO measures and policies that need to be adopted by developed countries to facilitate the movement of factors of production out of un-competitive sectors in the light of their comparative advantage. It is a matter of concern that the developed countries rejected this proposal. Unless a suitable agreed mechanism is devised to identify and facilitate the process of re-deployment of industries from developed to developing countries in the light of the evolving comparative advantage, structural changes as envisaged under the NIEO programme would indeed be difficult to achieve.

Multilateral Trade Negotiations

Negotiations for evolving a new set of general trading rules have been taking place in the context of the re-structuring of the international trade. Such trading rules envisage apporopriate consultations and multilateral surveillance and compensation in accordance with the internationally agreed criteria and procedures in the event of departures by the developed countries from the principle of "stand still" on the imposition of any new barriers to imports from developing countries. The second principle was that non-reciprocal and differential treatment should be accorded to developing countries in the multilateral trade negotiations between them and the developed countries. The third important area of trading rules concern the evolution of a set of equitable rules and principles regulating restrictive business practices adversely affecting international trade particularly that of developing countries.

There have been many breaches of the "standstill principle", thereby subjecting imports from developing countries to various restrictions. Such restrictions have taken the form of safeguard actions or voluntary export restraints or orderly marketing arrangements. In all these the important principle of such measures being subject to consultations and multilateral surveillance has been sought to be by-passed.

The outcome of Multilateral Trade Negotiations have fallen far short of the requirements and expectations of the developed countries. The principles of non-reciprocal and preferential treatment for developing countries received only qualifying acceptance. There has been, however, considerable progress on the negotiations concerning the evolution of equitable principles and rules regulating restrictive business practices taking into account the interest of developing countries.

A banana exporting country gets only 70 cents of the U.S. dollars 6 price paid for a box of its produce.

An important element in the restructuring of international trade relates to the expansion of trade among states having different economic and social system including trade between developing and social countries. India recognises that it is beneficial to foster mutually beneficial cooperation with other developing countries which have similar aspirations, economic potentialities and attitudes India should take all necessary steps to increase its trade relations with the developing countries of OPEC and ASEAN, African and Latin American regions. It is important for India to support the proposal of expansion and improvement schemes of socialist countries. India should work for acceptance of the proposal to continue the present bilateral clearing arrangements for multilateral clearing with all the socialist countries.

Cooperation among Developing Countries

It has been emphasised that collective self-reliance and Economic Co-operation among Developing Countries is an essential part of and instrument for the necessary structural changes required for a balanced and equitable process of world economic development. At the Arusha meeting of developing countries and at UNCTAD V a number of initiatives have been identified to promote economic co-operation among developing countries. There has been some controversies about the role of developed countries in promoting economic co-operation among developing countries which is not an exclusive concept. The developed counties will have to play a complementary or supplementary role. But fundamentally the initiatives and priorities in the context of promoting such cooperation, would, primarily have to be evolved by the developing countries themselves. India should see that the present progress in regional and sub-regional economic cooperation should be expanded into more regions covering all the common issues of cooperation in an eventual manner What is to be understood very clearly particularly by India, is that any further division among the developing countries like. oil importing 'developed-developing'—consisting of Brazil. Maxico, India etc. should not be allowed since this weakens the consolidation and strengthening of the collective bargaining power of those countries. There are also the other important aspects which require careful consideration

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The Future Of Mankind

Omkar Seth

THE years after the Second World War (1939-45) have been characterised by an increasing division in the world between a few industrialised nations, enjoying prosperity and rapidly rising living standards, and the overwhelming majority of nations where poverty has remained acute or even worsened This Great Divide is broadly called the "North" and the "South" because it has its geographic reflection along a line broadly separating North America, much of Europe, and Japan, from the extensive regions of under-development in the South,* embracing Asia, Africa and Latin America.

The rich few, constituting only 25 per cent of the world population, enjoy the lion's share of the World income (i.e. 80 per cent). The poor in the developing world (75 per cent of the world population) on the other hand, have to share between them only 20 per cent of the world's income today. According to the World Bank, the gap in per capita of the developed world and LDCs (Less Developed Countries) at its extremes, ranges in money terms to more than $ 8000 per capita.

Prof. Jan Tinbergen in his work entitled RIO : Reshaping the International Order—A Report to the Club of Rome (1976), presents the dmension of the income disparities in terms of real per capita income. According to him, an individual living in the richest part of the world has an average per capita income of US $ 1,100 (upper decile) compared with a per capita income of only U.S. $ 85 of an individual living in the poorest part of the world (lower decile). Thus, while purchasing power of the U.S. dollar in the poorest countries is taken as the yardstick, the decile ratio works out as 13 : 1.

The disparities in per capita income between the rich and poor countries have continued to increase over the years. As the data contained in the Table indicates, the relative income gap over the 25 year period widened rather than narrowed with the single exception of the oil exporting countries :

TABLE 1

Relative Income Gaps : Developing Country Per Capita incomes as a Percentage of Developed Country Incomes.

	1950	1960	1975
Developing Countries			
Poorest(a)	6.1	4.0	2.6
Middle-Income	20.8	18.3	17.0
Oil Exporting (a) .	N.A.	16.1	22.6
All Developing Countries	11.9	9.7	9.2

(a) Indonesia is included in the "poorest" category
Source : Annual Address to the Board of Governors by Robert S. McNamara, President, World Bank (Sept. 26, 1977 Washington D.C.)

Omkar Seth is Senior Research Officer, Planning Commission. The views are those of the author.

Growing inequalities in the world are reflected the increasing share of incremental world income us ped by the developed world as can be seen from ta on the next page.

As can seen from the table, 76 per cent of t incremental income during the 25 year period (19 75) has been cornered by the 24 per cent populati in the developed world. On the other hand, o 24 per cent of incremental income went to 76 per c of the population living in the developing countri Within the developing world, low income countri received only negligible portion (i.e., 3 per cent) the total icremental income.

In terms of per capita income, low incor countries increased their income by $ 2 as compar to annual increase of $ 131 in the developed worl

Thus, all evidence points to the perpetuating i equity in the existing International Economic Syste

The general explanation of the growing dispariti in per capita incomes between the rich and the po world is in terms of rapid population growth in m of the Third World Countries. Even the Wo Bank has fallen a prey to this fallacious argument is clear from the following statement in the Wo Bank Atlas (1974) : "Real growth continued in t developing world, in many cases at a rate equal to greater than in the more developed countries. Ho ever, rapid population growth continues in large are and disparities in per capita income between rich a poor countries continue to increase".

Perpetuating in equalities

In fact it is the Traditional International Econon System (TIES), which has resulted in perpetuation inequalities between the developing and the develop world.

The Traditional International Economic Syste evolved as it was at a time when most of the devel ing countries were under colonial rule, mainly work against the people of the developing countries prima because very low prices of primary products and mi ral resources were paid by the Colonial Pow and in return the manufactured goods were suppl at disproportionately high prices to the people the developing world. Even after the attainment Independence by the developing world in the P War period (i.e., during the 50s and the 60s) the pattern of trade (e.g., adverse terms of trade for developing world has continued to persist in m regions. The decile ratio of 13 : 1 of per capita inco between the richest and the poorest part of the w as worked out by Prof. Jan Tinbergen is patently acceptable to the millions in the Third World.

However, it is important to be fully conscious the magnitude of the task of closing the gap.

[illegible]

Distribution of Population and GNP, 1950–75

Country Group	percentage of population	Total GNP (in billion $ 75)		Share of incremental income	Income per capita (in $ 75)		Average Annual increase in income per capita (in $75)
		1950	1975	1950–75	1950	1975	1950–75
1	2	3	4	5	6	7	8
Total Developing . . .	76	277	1048	24	n.a.	n.a.	n.a.
(i) Low Income@ . . .	43	69	175	3	104	150	2
(ii) Middle Income . . .	33	208	873	21	454	957	20
Total Developed . .	24	1341	3841	76	2614	5883	131
Total	100	1618	4889	100	..	..	..

@ Low income countries are countries with annual income per person upto US $ 250.
Source : Annual Address of the President of the World Bank (1978). (PP. 5)

Mr. McNamara, President of the World Bank, has emphasised in his annual address (Sept, 1977) that the magnitude of the task of closing the 'Gap' is staggering (one hopes it is not a case of being over-awed by the immensity of the task involved) considering the past trend.

To quote :

"The algebra of closing the absolute gap in per capita income can be summarised as follows : a poor country growing faster than a rich one will not begin to reduce the absolute income gap between them until the inverse ratio of their growth rates is equal to the ratio of their per capita incomes. Thus, if the historical growth rates continue into the future, the present absolute income gap will continue to widen since developed and developing countries have been experiencing similar rates of per capita growth in the last 25 years. **Even if the developing countries manage to double their per capita growth rate, while the industrial world maintains its historical growth, it will take nearly a century to close the absolute income gap between them. Among the fastest growing developing countries, only 7 would be able to close the gap within 100 years, and only another 9 within 1,000 years"**. (emphasis ours).

However staggering the task, it is our contention that the fact of growing inequilities in the per capita income at the international level, is the main drawback of the existing so-called Traditional International Economic Order (TIEO) and any Plan for New International Economic Order (NIEO) must remedy the situation.

The crux of the present international situation is that the industrialised countries, or the "North" continue to exert considerable command over the developing economies, or the "South", through their trade, aid and investment policies. The developing countries have suffered over the years primarily because of ever increasing adverse terms of trade. Besides the depressed level of prices of raw materials and primary commodities, Less Developed Countries (LDCs) have continued to suffer because of sharp swings of Developed countries demand for the primary products exported by LDCs.

Violent fluctuations in commodity prices and thus in the foreign exchange earnings derived from them has adversely affected the prospects of LDCs over the decades The developing countries have found it increasingly difficult to plan their development strategy because of the lack of foreign exchange resources coupled with unpredictibility of export sales. The international trading system is inherently biased against them. The helplessness of the developing countries has exasperated them and led to greater tension between the rich and the poor nations.

Seventy per cent of the world's people get only 30 per cent of the world's income...........

Although the energy crisis, starting from quadrupling of oil prices in 1973, triggered off concerted efforts to evolve a New International Economic Order, the issue has been attracting world public opinion ever since the Brettonwoods Conference (1945). The first United Nations Development Decade, 1961 through 1970 proposed by President John. F. Kennedy, and adopted by the General Assembly of the United Nations in 1961 concretized the concern of the international community for ushering in rapid economic development of the LDCs. It called for the attainment in each developing country of a 'minimum annual rate of growth of aggregate national income of five per cent at the end of the decade", and urged member states to pursue policies to accelerate the economic and social progress of developing countries.

Under a New International Economic Order, the eveloping countries want control over their own atural resources, limits on the power of multinational ompanies and freedom to sell the goods they manu- icture in the markets of the developed countries. They 'ant grant aid from international agencies, loans from ie developed countries on concessional terms, easier ccess to know-how and technology and reform of the 'orld's financial system. Above all, they want fairer ommodity trading through a comprehensive package f trade deals—the integrated approach to commodity greements.

According to the projections of the "World Deve- ipment Report—1978", some 600 million people 'ould remain trapped in absolute poverty at the end ' this century. At present, some 800 million people 'e living in a state of poverty, suffering malnutrition, iteracy, disease, high infant mortality and low life pectancy.

The developing countries are determined to see the purchasing power of their commodity exports protec- ted. With inflation in the developed countries averag- ing 10-15 per cent a year, they want to see some kind of indexing or link between the prices of manufacturers and the prices of their raw materials and tropical foods. They want to see higher prices in real terms and a bigger share in the final consumer price of their commodities. Where they are processing and manufac- turing their commodities themselves, the poor nations want to be able to export to the developed countries.

But, not much has happened by the way of follow up action during the last five years or so.

The United Nations now has a Director General for Development and International Economic Cooperation (appointed on March 15, 1978).

At the 82nd session (September—December, 1977), the UN General Assembly established a "Standing Committee of the Whole" to monitor progress made in various economic fora in regard to negotiations bet- ween the developed and the developing nations on establishment of a New International Economic Order.

Outside the United Nations, we have an Indepen- dent Commission on International Development (the Brandt Commission) making efforts in this very direc- ion.

But on matters like aid, debt, the Comman Fund, (despite many rounds of negotiations in many fora), not much progress has been achieved. And, in the meanwhile millions of people in the Third World coun- ries, to use Gamani Corea's (UNCTAD's Secretary General) words, continue to "suffer behind a kind of poverty curtain.".

Recently, there have been a number of futuristic tudies by U. N. and voluntary organisations like the Club of Rome. The studies mainly focus on the long- ange future of the World Problematique.

According to one of the projections presented by Prof. Jan Tinbergen in his futuristic study entitled : "Reshaping the International Order", the decile ratio between the World richest and poorest could be re- duced from 13:1 to 13:2 over a 42 year period (1970-2012).

The present study restricts its horizon to the near future, i.e., next years or so i.e., by 2000. The problems of the Third World are similar and the policies and programmes for raising their living standards have also to be on similar lines. It is in this context that any futuristic study should primarily focus on the two broad groups i.e., the rich world and the poor world. Any sub-division of the poor world as has been done even by U.N. agencies, is not in the best interest of forg'ng the unity of the developing world. However, OPEC group of countries could be treated as a separate group because it is a neo-rich fast-developing world, at least in terms of per capita income. The Scenerio for the three broad regions of the world has been projected upto 2000 on the basis of certain plausible assump- tions. The figures of the per capita income for these broad regions for 1972 and 2000 are as follows :

Table 3

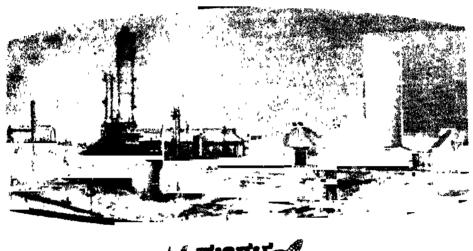
Regions	Per Capita Income (US Dollars at 1972 Prices)	
	1972	2000
Rich World	2750	6000
Poor World	200	650
OPEC Group of Countries	400	6000
Total (World)	970	2180

Note : Based on desirable but attainable assump- tions of annual growth rate of 2.8 per cent for the rich world; 4.3 per cent for the poor world and 10 per cent for the DPEC group of countries.

"..he who strives to become big is liable to be slain by villians. The hoarded goods of wealthy men provide enjoyment for their enemies; To indulge in luxury and pleasure is the cause of poverty and deaths"

—*Milarepa*

The lever for raising the incomes in the L.D.Cs is exports, or more appropriately increase in export earn- ings by better terms of trade.

The ideals and aspirations of the Third World countries as laid down in the U.N. Resolutions could be crystalised and concretised only if the Third World countries put forward a united stand for raising the living standards of their improverished masses at only minor cost (some reduction in the luxurient levels of living) to the rich world. ☐

International Trade and the Third World

Nitin Desai

THE SYSTEM OF WORLD TRADE prevailing in the early fifties was largely a product of the imperialist period and the unequal political relationships that formed its basis. The international division of the labour which determines the pattern of trade, was quite lopsided. Asian, African and Latin American countries were assigned the role of producing raw materials and primary products, which were not available in Europe and North America which, in their turn, became the manufacturers of the world. Despite the ideology of free trade, this unequal relationship was not just a product of market forces but also of the political domination exercise by the imperial powers. The economic history of India under British rule provides many instances of the exercise of political power to reinforce unequal relation in trade.

The inequitous relationship between the developed North and the under-developed South was cloaked in the garb of free trade. The essential elements of this ideology of free trade are enshrined in certain key principles included in the General Agreement on Tariffs and Trade (GATT) signed soon after the Second World War. One such principle is that of 'equal treatment for all' or non-discrimination between countries in the applicability of tariffs or import quotas Another is the rule of reciprocity in trade negotiations, which required both parties to make concessions. Apart from this there was a general bias against the intervent on of government in trade via import controls or export subsidies. In general, these rules tended to favour the continuance of the status quo and made it difficult to restructure the international division of labour.

The developing countries could clearly not accept the framework of international trade inherited from their colonial past. Individually and collectively they have made and continue to make concerted attempts to alter the rules of the game so that the international order can be restructured to attain, not merely the superficial equality of free exchange amongst unequals but the true equality that can only emerge from the growth and diversification of production in the developing countries.

The developing countries as a whole are known as the Group of 77, a term which goes back to the first UNCTAD meeting in 1964 when the developing countries, formed a pressure group which consisted of 77 countries though now the number is much larger. The Group has put forward a concerted stand in several international forums where issues relating to the international economic order are discussed. Some of these are the U.N. General Assembly and its Economic and Social Council (ECOSOC), the U.N. Conference on Trade and Development (UNCTAD), the multilateral trade negotiations (MTN) under the General Agreement on Tariffs and Trade (GATT), the Conference on International Economic Cooperation (CIEC) also known as the North-South dialogue in Paris and a variety of other forums. On many issues the deliberations of the Group of 77 are backed by the positions taken by the Group of Non-aligned States which includes a majority of the developing countries. Even when the Group as a whole has not taken a concerted stand, there has been a broad unity in the approach of the individual developing countries and their various regional sub-groups. In fact this unity of the Third World is the most significant achievement of post-war economic diplomacy and constitutes a major change in the balance of forces in the international economy.

There has been a broad unity in the approach of the individual development countries belonging to Group of 77 and their various regional sub-groups. This unity of the Third World is the most significant achievement of post-war economic diplomacy and constitute a major charge in the balance of forces in the international economy. The author while discussing the hard line attitude taken by these countries feels that there is urgent need to understand more clearly the nature of international inter-dependence and to ensure that short term gains or losses do not dominate discussing on the NIEO.

The most significant achievement of the developing countries has been their success in legitimising a strongly interventionist trade pol cy in the form of import quotas, export subsidies and preferential treatment. In the ideology of free trade, imports and exports should flow across borders without any quantitative restriction imposed through licensing. GATT had always recognised the possibility that quantitative regulation of imports would be necessary for short-term balance-of-payments problems. However, the developing countries felt that a sharp increase in the rate of investment and the tempo of development would generate import demands that could not be met through normal export earnings. Hence a rationing of foreign exchange implemented through import licensing would be necessary. Moreover, it was felt, that the new industries which they proposed to set up could not be exposed to foreign competition, even if foreign goods were made more expensive through high tariffs. Hence import restrictions seemed an essential component of development strategy. One of the early successes for the developing countries was the introduction of Article XVIII in GATT permitting developing countries to impose restrictions to implement programmes and policies of economic development. At a later stage,

Nitin Desai is Adviser (PAD) in the Planning Commission. The views expressed in this article are personal and not necessarily those of the organisation to which he belongs.

the developing countries also succeeded in modifying GATT rules to permit export subsidisation and preferential treatment. India played a key role in this battle, particularly in the inclusion of Article XVIII.

The notion of preferential treatment ran aground on the most-favoured-notion clause which guarantees equal treatment for all trading partners. The developing countries felt that some degree of preference had to be accorded to their manufactured goods if these were to compete in the markets of the developed countries with goods from established sources. As an argument this is an extension of the infant industry argument to an infant exporter. Its further merit is that it implies an expansion of world trade, which in the long run, would be in the interests of all parties. Yet this argument was not readily accepted. Even though the need for preferential treatment was accepted in UNCTAD I in Geneva (1964) and UNCTAD II in New Delhi (1968), the actual relaxation came in 1971 when the signatories to GATT agreed on two waivers to the most-favoured-nation principle. One waiver permits developing countries to extend preferential trade treatment to each other and the second forms the basis for the Generalised Scheme of Preferences (GSP) Under the latter scheme most developed countries have introduced a scheme of preferences for selected manufactured products from the developing countries. In practise these preference schemes have very limited applicability and are circumscribed by many restrictions.

These limited modifications, as well as the attempts made to diversify the production base have led to some changes in the pattern of international trade as is indicated by the table below.

This table brings out the significant change in the composition of exports of the oil importing developing countries (OIDCs). The trade pattern of oil exporting countries is rather special and hence is not taken into account in this comparison. There is a sharp increase in the share of manufactures in general and of engineering goods in particular. To some extent this is a consequence of the somewhat faster rate of growth of world trade in manufactures relative to primary products. At the same time, there is a substantial improvement in the share of developing countries also. However, the bulk of the increase in the share of manufactures in the exports of OIDCs took place between 1963 and 1973. The improvement since 1973 is small which is surprising considering the fact that it is in this later period that preference schemes were in operation. The data also show that the share of the major labour intensive manufactured commodities, textiles and clothing, in imports of industrial countries did not go up in this period. In engineering products developing country exports increased nearly fifty-fold over the last 15 years ; yet, even now they are heavily dependent on imports of engineering goods, which in terms of value were three-and-a-half times their exports of these commodities, in 1978.

International trade is based on differences in comparative advantage and hence a complete identity in the structure of imports and exports of all countries is not possible. However, at a broad level of sectoral aggregation like 'primary products' and 'manufactures' for large group of countries, like 'developing' and 'developed', the structural patterns should converge if the primary producing developing countries start processing these material within their national boundaries

Table 1

Pattern of Internat onal Trade

	Exports			Imports		
(1)	1963 (2)	1973 (3)	1978 (4)	1963 (5)	1973 (6)	1978 (7)
Industrial Countries						
Total ($billion)	99	391	847	100	400	853
Shares (%)						
Primary products	26	22	18	39	28	22
Fuels	4	4	4	11	12	20
Manufactures of which	67	73	76	47	58	57
Engineering	36	41	44	23	31	30
Textiles and Clothing	7	6	5	6	6	6
Oil importing Developing countries						
Total ($billion)	22	68	163	27	83	200
Shares (%)						
Primary products	76	56	43	26	24	18
Fuels	7	9	14	11	12	18
Manufactures of which	14	34	39	59	60	60
Engineering	2	9	13	31	33	35
Textiles & Clothing	6	12	11	7	6	4

Source: GATT : "International Trade, 1978-79" reported in IMF Survey, 26 November 1979.

and exporting them as manufactured products and as they diversify their economies. The fact that the convergence has not proceeded far enough indicates that the changes in the international economic order have not been sufficiently substantial. This is why the developing countries continue to press for further changes in this order.

Stabilisation of Earnings

One of the major demands of the developing countries is for the stabilisation of earnings from the trade in primary commodities. Given the slow pace at which their economies and their exports are being diversified so as to increase the share of manufactures, the developing countries feel that a programme to ensure orderly conditions in primary commodity trade are desirable. Several individual commodity agreements have been in force but the experience with such a parttial approach is not very encouraging. Hence, in 1975, through UNCTAD, 'An Integrated Programme for Commodities' was put forward. The programme has four general objectives :

(i) to encourage more orderly conditions in general in commodity trade both with regard to prices and the volume of trade, in the interests of both producers and consumers ;

(ii) to ensure adequate growth in the real commodity export returns of individual developing countries ;

(iii) to reduce fluctuations in export earnings , and

(iv) to improve access to markets of developed countries for developing countries, exports of primary and processed products.

These objectives are sought to be attained through the framework of commodity agreements by the setting up of a series of commodity stocks financed by a common fund. The programme also envi ages an improved system of compensatory finance for maintaining stability in export earnings. Seventeen commodities have been identified for this purpose of which the ten core commodities are cocoa, coffee, tea, sugar, hard fibres, jute and manufactures, cotton, rubber, copper, tin. (The other seven are wheat, rice, banana, meat, wool, iron ore and bauxite).

The importance of this proposal arises from the key role that these commodities play in the export earnings of developing countries and their susceptibility to price fluctuations. In some cases, particularly for agricultural commodties, the fluctuations arise from supply instability ; in some, like metals and rubber, from the variations in demand over the trade cycle in developed countries. Trade in many of these is in the hands of large companies based in the developed world and is often subject to speculative bouts. Some data on the importance of these commodities in international trade and the degree of price fluctuation are given in table 2.

The significant feature of this proposal is that it covers a wide range of commodities so that the benefits would accrue to a large number of countries. This has ensured a degree of unity amongst the developing countries which would have been difficult to obtain if commodity agreements had been taken up individually, since for any single commodity a large number of developing countries will also be importers. Another feature of the integerated approach is that the financing of the stocks and their operations would be common for all commodities. When one commodity goes up in price the common fund would have to buy and conversely when it goes down it would have to sell. In so far as price fluctuations in different commodities are offsetting the requirement of finance for stockholding would be reduced.

The discussions have related mainly to the ten core commodities. Over the 14 years that have elapsed since the programme was first suggested a little progress has been made. There is now a measure of agreement on the fundamental demands of the Common Fund. When the matter was discussed at the latest session of UNCTAD, held in Manila in May—June 1979, all that could be achieved was an agreement on the desirability of accelerating negotiations on individual commodities. There was sharp disagreement even on the proposal for an UNCTAD study on compensatory facilit'es for an export shortfall, which is one of the components of the Integrated Programme. Party because of the slow progress of the Integrated Programme, there seems to be a tendency to form producer associations to regulate production and prices. Such associations would not realise two advantages of the Integrated Programme that of common funding of stock operation and of attention to consumer interests, a matter of some consequence, since developing countries are also consumers of primary products.

The commodities programme has been criticised on two important grounds. The first is that the benefits of offsetting price fluctuations may not arise since all prices, in fact, move together. The second is that price stabilisation will not protect export earnings if the instability is due to supply fluctuations. With lower supplies and stable prices earnings would go down relative to what they would have been had prices been

Table 2

Common Fund Commodities : Importance and Degree of Price Fluctuation.

Commodity	Share in Developing Countries, Total Export earnings (excluding petroleum)	Average percentage variation of price from 5-year moving average 1955-56
(1)	(2)	(3)
Core Commodities		
1. Cocoa	1.7	17.1
2. Coffee	4.1	7.6
3. Tea . . .	0.9	3.5
4. Sugar	5.9	13.2
5. Sisal	0.2	19.2
6. Jute	0.2	9.5
7. Cotton	2.2	5.0
8. Rubber . . .	1.6	12.8
9. Copper . . .	2.9	15.5
10. Tin	1.1	7.3
Total for Core Commodities	20.8	..

Sources : Based on World Development Report, World Bank and other studies.

allowed to rise in response to the lower supply. Both these arguments require a careful analysis of the sources of instablity in commodity markets and the distributions of gains and losses from price fluctuations. The latter will depend on the nature of sale contracts between primary producers and buyers in other countries and on whether stocks are owned or held by the producing country or by marketing organisations in developed countries. The opposition to the commodities programme from the developed world suggests that despite the theoretical possibilities, in practice the developing world stands to gain from the programme.

Apart from primary commodities, the trade relations between developed and developing countries in the area of manufactures are also in a somewhat unsatisfactory state. Some expansion in the trade in manufactures between these two groups of countries has taken place. However the possibilities of further expansion have not been taken into account in recent trade negotiations. In recent years two such rounds of multilateral trade negotiations have taken place : the "Kennedy Round" from 1964—67 and the "Tokyo Round" from 1975—79. In the Kennedy Round there was an across the board cut of 35 per cent on items with a world trade value of $40 billion. However the tariff cuts were deepest in commodities characterised by advanced technology or capital intensity and products of interest to developing countries received, on average smaller, tariff reductions than other products. The 1968 UNCTAD report estimates that out of the $ 17.4 billion of non-proferential export of developing countries, only $ 2.2 billion were covered by tariff cuts. The results in the Tokyo Round are very similar. Though a tariff cut of about one-third was agreed on items with a world trade value of $ 110 billion, the most important cuts were on commodities like non-electrical machinery, chemicals and transport equipment ; cuts on commodities like textiles and leather, which are of special interest to developing countries were less than average. Developing countries have made some gains from these negotiations like the acceptance in Tokyo Round of tariff and non-tariff preferential treatment in favour of developing countries as a permanent legal feature of the world trading system But the real gains in the form of tariff reductions of interest to them have been limited. In fact the general lowering of tariffs reduces the margin of advantage accruing to developing countries in the Generalised Schemes of Preferences and hence the MTNs would probably worsen their position in regard to the trade in manufactures with developed countries.

Besides the failure to pass on the benefits of trade liberalisation to the developing countries, the developed countries have increasingly resorted to non-tariff protective measures against imports from the third world. A variety of devices like "orderly marketing arrangements", import quotas, price floors on imports, countervailing duties, administrative obstacles and subsidies to domestic producers are used to reduce the competition from developing country supplies. Quota systems are used extensively in textiles and clothing and have been introduced in other product categories like footwear, television sets and steel on a partial basis. Strong pressure groups have clamoured for protection in other items and the general climate is against liberalisation of trade. At the recent sessions of UNCTAD, the Group of 77 proposed a mechanism for reviewing protectionism in the developed countries, a proposal that did not find favour. Generally protectionism in the developed countries arises from the political need to protect specific industries even though there are other industries which can absorb the labour from industries affected by manufactured imports from developing countries. A recent OECD study estimates that between 1976 and 1986 trade in manufactures with developing countries will lead to a net loss of 200 thousand unskilled or semi-skilled jobs while employment of skilled workers, manageers and administrators will expand by almost exactly the same amount. Hence adjustment problems if any are essentially short-term in character though in some cases there may be a need for adjustment assistance. De pite this there is little evidence to suggest that the tempo of rising protectionism will decline.

The general picture that emerges is that the system of international trade still reflects the unequal relaionships of the colonial period and the changes that were introduced have been few and far between. This is brought out by the analysis of the elements that went into the ten-fold growth in world trade between 1955 and 1976 which are described in the table below :

Table 3

Composition of the Growth in World Trade 1955-1976.

	Growth 1955-76 ($billion)	Percentage share in growth
1. Trade in manufactures between industrial countries . . .	301.70	33.6
2. Exports of primary products from developing countries to all areas	181 60	20.2
3 Exports of primary products from other countries to all areas . .	156 35	17.4
4. Exports of manufacturers from industrial areas to developing countries . . .	101.90	11.4
5. Trade in manufacturers within the Eastern Trading Area . .	34.75	3.9
6. Exports of manufactures from developing countries to industrial areas . . .	29.85	3.3
7. Exports of manufacttures from industrial areas to the Eastern trading area . .	25.75	2.9
8. Other flows . .	65.80	7.3
9. Total Growth . .	897.70	100.0

Source : Network of Development Trade, GATT Studies in International Trade.

(*Contd. on page* 62)

Plan Harmonisation Among Developing Countries

V. R. Panchamukhi

THE DEBATE ON New International Economic Order in recent years has generated a large number of conceptualised frames of NIEO along with the alternatives of strategies and policy instruments required to realise them. These frames range from the extreme form of complete delinking between the developed and the developing worlds to the other end of dependence of the developing world on the developed world with various shades of intermediate frames characterised by the different degrees of interdependence between the two worlds. Strategies and policy instruments proposed in these different frames of NIEO are also diverse and often too numerous to be useful in practice. These range from the schemes for fundamental restructuring of the pattern of production and trade as between the developed and the developing worlds, to the policy prescriptions such as tariff concessions, conduct for the transfer of stage of only intellectual somersaulting without the hope of any concrete measures of salvaging the world from this present fiasco on NIEO. Dismal failure of the recent UNCTAD-V in Manila to achieve any meaningful results in terms of immediate programmes and schemes consistent with the NIEO objective, had only added further dismay for the champions of NIEO.

In view of the present situation regarding the NIEO, —rather disappointing from the point of view of the interests of the developing countries—there is need for some intensive rethinking on the part of the developing countries and the international bodies such as UNCTAD, UNIDO, who have been championing the cause of NIEO with a view to identifying, in clear terms, the priorities of the NIEO frames and the right strategies to be adopted by the developing countries. The purpose of this paper is to make a contribution to the discussion of the priorities and the strategies

The debate on NIEO has generated a number of alternative frames and strategies. There are two aspects of NIEO which need to be given place of prime importance. They are the restructuring of world production and collective self-reliance. According to the author, the recent experience in the world economic system indicates the need for collective self-action and coordination in the field of investment and production activities among the developing countries. This could be achieved only through the approach of systematic plan harmonisation. He calls upon organisations such as UNIDO to work out detailed coordination plans for investments and production in the developing countries.

of technology etc. The multiplicity of the frames, strategies and policy instruments that has emerged as a result of the intense debate on the NIEO issues, is not a reflection of the keenness on the part of the members of the world community to move fast towards the achievement of a New International Economic Order—whatever it may mean—but is certainly an indicator of the existence of the mutually conflicting multiplicity of interests and also the relative strengths of the vested interests who would not like to disturb the existing economic order in the world economy.

Even though the debate on NIEO originated in 1973-74 periods, with the intense urge of both the developed and the developing countries to move the world economy to a more efficient frontier of international economic relations, the present form of the debate in this regard is clearly one of confrontation between the so-called North and the South. The retrogradatory attitudes and programmes including the protectionist tendencies on the part of the North coupled with the lack of clarity in thoughts and actions on the part of the South have brought to the debate

for the developing countries. The main message of the paper is two fold : firstly to suggest that the most important elements of the NIEO frames are : (a) Restructuring of the pattern of production and trade in the world economic system ; and (b) Promotion of the collective-self reliance on the part of the developing countries ; and secondly to emphasise the point that these basic elements of the NIEO could be realised in an effective manner, not just by marginal tinkering with the trade relations among the developing countries but by bringing about more basic readjustments in their own investment and production strategies in such a manner as to increase the complementarities in production and trade among themselves. The latter strategy is described as one of Plan Harmonisation among the developing countries. The next two sections describe the main features of the concepts of Restructuring of Production and the Collective Self-Reliance. These are followed by a section for discussing the approach of plan harmonization and the role of UNIDO in this regard. The last section provides a Summary of the paper and a few suggestions for the process of planning in the developing countries.

V.R. Panchamukhi, Professor, Institue of Economic Growth, New Delhi.

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The concept of structural changes in the international economy has been widely recognised in the discussion on the NIEO and it is often understood to mean one or all of the following aspects of the structural changes : (i) Firstly, the "shifts" in the patterns of production, consumption and trade in the world economy, and particularly those relating to the differentials as between the developing and the developed worlds. This may be termed as the restructuring in the international division of labour ; (ii) Secondly, structural changes in the effective control over the use of the world's resources and over the international decision making process, and (iii) Thirdly, reforms in the institutional framework of international economic relations, implying changes in the rules and principles governing the international flows of trade, technology, money and finance.

Structural Changes

There could be several variants or sub-frames of the main elements of restructuring as described above. Of all these different processes of restructuring, the first one implying a fundamental redeployment of resources and changes in the location of production activities has relatively more far-reaching consequences regarding the achievement of NIEO. According to UNCTAD handbook of International Trade and Development Statistics, 1976, share of Intra-developing countries exports in the total exports of the developing countries has fallen from 24.4 per cent in 1955 to 22.9 per cent in 1976 with the lowest share reached in 1976 (19.6 per cent). If, however, the trade in mineral fuels is omitted this share has increased from 19.4 per cent in 1960 to 25.3 per cent in 1976, the sharp increase being realised only in the post-1970 periods. Except in the case of chemicals, Iron and Steel and Agricultural raw materials, the shares of exports to the developing countries in their total exports has fallen in 1970 from the levels in 1960 Share of imports from developing countries in their total imports has however recorded marginal increases. These percentages reveal that there is lot of scope for increasing intra-developing countries' trade.

Restructuring on trade is closely linked to that in production. Shifts in the patterns of world production structures as between the developing and the developed countries could be necessitated due to various factors, some of which are described as under :—

(a) Increase in Labour Costs in the developed countries while the industry is labour-intensive ; examples are garments, fasteners, electronic components, assembly plants etc.

(b) The level of technology required in the industry is of a very low type and the labour of developed country considers the job as a drudgery and dirty one while the developed country has moved to higher stages of sophisticated technology, examples are forgings and castings, metal products etc.

(c) The industry implies environmental pollution and the developed country has reached saturation point regarding the pollution problem : e.g. chemicals etc.

(d) The industry is based on migrant labour from developing countries and the developed country desires to discourage the labour immigration ; e.g. textiles.

(e) The Industry is heavily dependent on raw materials whose supply is controlled by the developing countries e.g. Petrochemicals.

(f) The establishment of the industry in the developing country implies increased demand for imports of machinery, components and raw materials from the developed countries, in the long run, or alternatively, it implies regularity in the supplies of intermediate goods which improve the export-performance of the developed country.

(g) Purely on humanitarian grounds that the establishment of the industry in the developing country facilitates its rapid development and thereby contributes of the gradual elimination of the income-gaps between developing and the developed worlds.

There are two types of process of restructuring. One may be called as the Natural process which is set into practice only through the pressures of the economic forces underlying the factors listed above and second may be called as catalysed process which is set into practice through deliberate efforts on the part of the developing and the developed countries.

In order that the latter process of restructuring begins to be effected in the world economy, it is very necessary that both the developing and the developed countries should be aware of the industries which "ought to" enter the restructuring plan due to one or more of the factors listed above, and the plan frames and the package of industrial policies in the relevant countries are harmonised to facilitate the restructuring plan. A detailed benefit-cost analysis with a clear identification of sharing of the benefits and costs as between the developing and the developed countries is necessary for each industry proposed to be catalysed for the restructuring process.

Collective Self-reliance

The second element of strategic importance in the NIEO debate is that of collective self-reliance among the developing countries. This concept is in a way, an extension of the notions of self-reliance, import-substitution etc. in vogue at the national level to the level of a group of developing countries or the third world as a whole. Collective self-reliance in the broader sense of the term implies cooperation among the developing countries regarding the import and export activities, monetary arrangements, and also economic cooperation in the field of production. Import and export cooperation covers the areas of indenting systems joint information services, joint purchasing and common warehousing, bulk purchased/Sale agreements to generate strong bargaining power vis-a-vis the trade partners coordination of import and export policies, cooperation in marketing and distribution channels, research and development etc. The various mechanisms of cooperation in the monetary field include multilateral clearing arrangements, settlement of net balances, reserve management and reciprocal financial assistance schemes, etc. While success in these measures, could effectively contribute to the objective of achieving self-reliance, their scope is rather limited.

Need for Collective Self-Action

It should be emphasised at this stage that for effective restructuring of the world economy and for promoting collective self-reliance on a long term basis, it is necessary that the developing countries should

initiate some concerted efforts among themselves rather than continuing to expect the developed world for some extraordinary steps towards NIEO. Recent experiences in the world economic scenes and the international forums are evidences for this conclusion. UNCTAD IV generated hopes for a successful implementation of the integrated programme of commodities (IPC) and the Common Fund which could have ultimately resulted in some restructuring of the world production system through the encouragement of the processing industries in the developing countries. The multi-product approach proposed under the IPC had built into it the possibility of bringing together various developing countries under one common programme. But this was thwarted by the presentation of alternative schemes such as Raw Material Bank, commodity by commodity approach and the diminished level of Common Fund etc. The thrust of this programme is completely lost, at present though the UNCTAD-V has achieved some success in retaining this idea in its own documentations. Similar is the fate of GSP which was initiated with the noble objectives of providing differential market access to the manufactured products of the developing countries and thereby encouraging effective structural changes in the production activities of the developing countries. It has been one of the proclaimed objectives of the GSP that, it should act as a catalyst in inducing "investment" and hence production of new manufactured products in the developing countries. This scheme was accepted by the developed countries in 1970's partly on ethical grounds of helping the developing countries and partly on rational economic grounds that such emergence of production patterns based on the comparative advantage of the developing countries would ultimately, in the medium and long terms, benefit the developed countries. The experience under GSP during the last eight years 1971-79 could be classified into three stages : The first three years for information dissemination and making the exporting community aware of the benefits of GSP and the next three years for identifying the marketing techniques and product adaptation, and the remaining two years for realising some benefits of GSP and also undertaking new investments for production of new export products covered under GSP. Such a slow diffusion of the GSP culture is inevitable in a developing economy where the basic export culture itself is of poor quality and needs to be nourished. In view of this point, the true results of GSP in terms of new investments were just in the offing. However the partial erosion of GSP due to the recently concluded MTNS and the increase in the protectionist tendencies in the developed countries have tended to thwart the process of restructuring in the world production system.

One more word about protectionist tendencies in the developed world. A large number of products coming under the umbrella of protectionism in the developed world belong to the basket of products in which the developing countries have or are likely to have clear comparative advantage. Industrial fasteners, steel wires, steel mill products, textiles, garments, leather products, etc. are examples in point. Protectionism has taken subtle forms thus making an explicit identification for its effects very difficult. But it is broadly clear, that these protectionist policies of the developed countries are designed with a very short-term perspective and are devoid of the consideration of the medium or long-term benefits of restructuring of world production through the encouragement to the developing countries to realise their comparative advantage in a free environment.

The example of the retardatory experiences in the world economic scene given above indicate the basic philosophy that the developing countries should no longer pin their expectations on the actions of the developed countries. It is high time that some concrete steps are taken towards self-action by the developing countries. The practice of holding meetings of the Group of 77 (or 104) prior to the UNCTAD's or UNIDO meetings is a good one but these meetings are again aimed at preparing a shopping list of actions and strategies to be expected of the developed world without at the same time discussing the alternatives of action programme which could be initiated by the developing countries themselves. It would be naive to argue that no such alternatives exist in an interdependent world. But the approach of collective self-action is not to negate the interdependence aspect of the world system but only to emphasise the need for inducing the right kind of interdependence without too much reliance on the dependence philosophy.

Plan Harmonisation

At this stage, we should consider the role that the approach of plan harmonisation among the developing countries could play in bringing about the desired restructuring and collective self-reliance. Plan harmonisation implies effective coordination in the planning processes, policies investment decisions, institutional and information infrastructures etc. It is at the thin end of the more rigid forms of economic cooperation such as Economic Union, Customs Union, Free Trade Area. It is essentially aimed at emphasising the importance of coordination in the investment and production activities of the developing countries. It is not a new concept in so far as it had been propounded and discusesd in the early part of the sixties but not much progress has been achieved so far in putting the concept into practice. It is useful to point out here that economic cooperation in Western and Eastern Europe began with the basic approach of coordination in the production activities and policy frames. The success of the OEEC rests on the approach of "common planning" adopted in its early period. Similarly the efforts of the Council for Mutual Economic Assistance (CMEA) to coordinate the developmental plans of the East European countries by working out concerted production and investment programmes in the selected key sectors such as coal, electricity, metals, chemicals, machine building etc. are worth noting.

What are the necessary conditions for the Plan Harmonisation to be made effective ? What are the present patterns of complementarities in production and trade among the developing countries ? Should the process of harmonisation begin on a sector by sector basis and at sub-regional level to encompass at a later stage more comprehensive aspects of planning ? How should multilateralism be introduced in the tasks of production cooperation rather than the bilateralism at present in vogue in the concepts of joint ventures, trade agreements etc ? How far the intra-industry trade rather than the inter-industry trade could act as a catalyst in promoting the process of investment coordination ?

What are the industries which could be effectively "transferred" from the developed to the developing countries, and about which the developing countries need to adopt a coordinated frame of investment and production decisions? These are some of the issues on which further study could provide some guidelines for concrete actions.

How should one go about to initiate plan harmonisation? It is feasible to start the exercises on a regional basis. The first step is that each planning agency explicitly builds into its planning methodology the objective of increasing complementarity with the other developing countries. Multiregional, multisectoral planning Models in which the selected developing countries are explicitly introduced could provide some guidelines for investment coordination schemes. Sectoral approach could be a good starting point. Iron and Steel, Fertilizers, Aluminium, Pulp and Paper, Rubber Products etc. provide good starting points for identifying the scope of intra-industry specialisation in the different countries in the region around India. The present efforts regarding rice, coconut, jute etc. and the experience under them need not thwart the initiative of starting more sectoral coordination schemes. In fact multiproduct coordination schemes have greater chances of success than the single product schemes.

The international agencies such as UNIDO, ESCAP. have a significant role to play in this regard. The first step of "selling" the idea of Plan Harmonisation through elaborately worked out investment coordination in various fields could be best undertaken by the organisations such as UNIDO. Often the planners in the developing countries are not aware of the advantages of investment coordination and intra-industry specialisation which could improve their mutual complementarities. This gap in knowledge should be filled up. This is not to diminish the importance of the various subsequent steps of coordinated policies by the developing countries themselves. However, a suitable climate would be generated if the coordination plans are available for ready reference.

Concluding Observations

The debate on NIEO has generated a number of alternative frames and strategies of NIEO. There are two aspects of NIEO which need to be given place of prime importance. First is the restructuring of world production and second is the aspect of collective self-reliance. It is emphasised in this paper that recent experience in the world economic system indicates that there is need for collective self-action on the part of the developing countries and for far reaching fundamental results there should be coordination in the fields of investment and production activities among the developing countries themselves. This could be achieved only through the approach of systematic plan-harmonisation introduced at the regional and sectoral levels to start with. Organisations such as UNIDO should take the initiative in working out detailed coordination plans for investment and production in the developing countries. These efforts of international agencies should be backed up by the appropriate induction of the criterion of complementarity with the fellow developing countries in the planning methodology of the planning agency of each developing country involved in the coordinated production plan. □

International Trade And The Third World

(Contd. from page 58)

As the table shows the bulk of the expansion in trade during a period when, ostensibly, the world economic order paid greater regard to the interests of developing countries, is accounted for by the growth in primary product markets and trade in manufactures amongst industrial countries. Even in primary products much of the growth is in exports from industrial areas many of whom like the USA, Canada, etc. are major producers of primary products. It must also be remembered that the bulk of the growth in primary product exports of developing countries is accounted for by crude oil which benefited only a few countries. Growth in world trade in manufactures from developing countries in the industrial areas accounts for a very small proportion of the total growth in world trade.

The evidence presented suggests that the crucial problems affecting the foreign trade of developing countries have not been tackled. Over the past couple of decades the only gain seems to be the acceptance of protection for domestic industries in developing countries as a part of the rules of the game. But the proposals for primary commodities, for export stabilisation and for market access have secured little beyond assurances. This is despite the fact that, in the long run, all countries stand to gain from export expansion. In fact many analysts and even agencies based in the developed world are keen supporters of the concept of export-led growth. None of them seem to ask whether this can provide a model for all developing countries in a situation of rising protectionism in the developed countries.

The developing countries continue to pursue their proposals for a restructuring of the international trade system in many international forums. There is also a greater recognition of the advantages of multilateral or bilateral cooperation among developing countries themselves. Many primary producers are also in the process of organising themselves into producer associations a la OPEC. Developed countries are taking an increasingly hard line in negotiations as was shown in the latest session of UNCTAD. There is, therefore, a gradual drift towards confrontation and the concepts of cooperation underlying the New International Economic Order may soon become irrelevant. There is therefore an urgent need to understand more clearly the nature of international interdependence and ensure that short-term gains or losses do not dominate discussion on the NIEO. This is the task before decision makers and analysts in the developing and developed countries. □

Cooperation not Confrontation

D. R. Gupta

THE United Nations General Assembly at its Sixth Special Session adopted on 1st May, 1974 a historical declaration on the establishment of a New International Economic Order (NIEO) based on equity, equality, inter-dependence, common interest and cooperation among all States, irrespective of their economic and social system and a concrete 'Programme of Actions' on the establishment of NIEO. This included solution of fundamental problem of raw materials and the primary commodities relating to trade and development, the reform of the international monetary system, financing of the development programmes of the developing countries, speedier industrialisation of the developing nations, transfer of technology, regulation of control over the activities of multi-national corporations and promotion of cooperation among the developing countries.

The Resolution, inter alia called for (i) improving and diversifying their production capacity and productivity and increasing their export earnings (UNCTAD was asked to reach decisions on improvement of market structures in the field of raw materials and commodities of export interest to the developing countries), attaining official development assistance target of 0.7 per cent of GNP of the developed countries; (ii) establishment of trust fund to be financed particularly through IDA and through voluntary contributions; (iii) reduction in the role of national reserve currencies in the future monetary arrangements, participation of developing countries in the decision making process in the international finance and development institutions, significant expansion of assistance from developed countries to the developing countries in support of science and technological programme; (iv) substantial increase in the volume of assistance to developing countries for agriculture and food production, access to the markets of developed countries for food and their agricultural products, stable supplies of fertilisers and other production inputs to them at reasonable prices and pending the establishment of a world food-grain reserve earmarking stocks and funds to be placed at the disposal of the World Food Programme, and to promote cooperation among the developing countries. The Resolution laid special emphasis on the importance of such mutual cooperation at sub-regional, regional and inter-regional levels and asked the developing countries to provide as and when requested suitable support and assistance for the promotion of such cooperation.

These declarations were based on the recognition of the fundamental aspects of the international economic order that had emerged after the Second World War. The third quarter of the current century witnessed the emergence of 90 countries as free and independent nations. These Resolutions of the General Assembly in a way represents the urge of these newly independent nations to usher in a new international economic order in which they could move speedily on the path of economic and social progress. These also were based on the realisation by the international community as a whole that the benefits of tremendous technological progress recorded during the Nineteenth and the twentieth century were not shared equitably by all the members. The developing countries which constituted 70 per cent of the population accounts for only 30 per cent of the world income. A small number of developed countries account for 80 per cent of world trade, about 95 per cent of private investment and substantial share of technology and consumed 70 per cent of world resources. The gap between the developed and the developing countries was not only large but continued to widen in a system which was established at a time when most of the developing countries did not exist as independent states. Since 1970, the world economy has experienced a series of grave crisis having serious repercussions specially on the developing countries because of their greater volnerability to external economic impulses. The developing world has also (in the form of group of 77) emerged a powerful factor that has to be reckoned with in the international political and economic relations. These basic changes in the world political scene necessitated full and equal participation of the developing countries in the formulation and application of all decisions that concerned the international community.

The New International Economic Order enunciated in the Resolutions of the General Assembly of 1974 and 1975 is still a dream, the realisation of which would call for high degree of cooperation between the North and South. The author feels that this is both a challenge and an opportunity to the leading statesmen of the world for ushering an era of accelerated growth, prosperity and happiness of the nations. He urges the developing countries to adopt an attitude of cooperation as an instrument of getting more favourable terms of trade and aid. He fears confrontation if adopted beyond a limit may not achieve the basic objectives and may prove counter-productive.

Concept of Inter-dependence

The NIEO was also based on the concept of inter-dependence of all the members of the world community. It was increasingly realised that the interests of the developed countries and those of the developing countries could no longer be separated from each other and there was close inter-relationship between the prosperity of the developed countries and the growth and development of the developing nations and that the prosperity of the international community as a whole depended upon the prosperity of its constituent parts. International cooperation rather than confrontation in development processes is the shared goal and common ideas of all countries. The concept of inter-dependence is itself not new. It was defined not only as a strategy for prosperity but also a necessity for survival and growth of the Third World.

What has been the outcome of these two Resolutions so far as the developing countries are concerned?

D. R. Gupta is Adviser (MP & D), Planning Commission.

The position has been summarised lucidly in the opening speech of the World Bank President at the Belgrade Meet in October, 1979. The so called Second Development Decade is over, none of the targets was within grasp and the poor people of the world have been left out of the limited progress made. On the whole the poorest countries including India accounting for 61 per cent of the total population of the developing countries could manage only 4 per cent annual GDP growth and 1.7 per cent per capita income growth during 70s. This, according to him, "was the virtual stagnation and means that for hundreds of millions of individuals already trapped at the bare margin of survival, growth in income was two to three dollars a year". The World Bank economists suggested that a growth rate of 5.6 per cent a year by developing countries was possible in the next decade. Even if this is reached, "this would still fall far short of what is desirable in terms of results in the developing world, not enough food would be grown, not enough jobs will be created and not enough personal income would be generated". According to the World Bank President "the economic strains of 70s have been more severe than any since the disruption of the World War II and the global depression that preceded it".

The official aid target reached so far is less than half of what was envisaged in the Resolutions mentioned above. The share of the third world in the total world trade had declined steadily from about 35 per cent in 1948—50 to about 1/6th in 1978 These countries' share in manufactures & industrial products is just about 7 per cent, there are hardly any signs of the 25 per cent share envisaged at Lima Conference being reached by the turn of the century What is even more disquieting feature of the international economic order is that manufactures of some of the developing countries particularly in areas of textiles, garments, leather products, electronics and steel are still facing stiff protectionist barriers in the developed countries inspite of some recent and limited concessions. There is hardly any scope in the present world situation for the rational allocation of industrial production on the basis of natural endowment, free trade and comparative labour costs. Even in the recently concluded trade negotiations (Tokyo Round) the third world countries have been almost completely left out. The generalised scheme of preference introduced since a decade ago by a number of countries has not significantly helped to increase the access to the export of developing countries products and manufactures.

Indebtedness

The indebtedness of the developing countries has been mounting up by leaps and bounds and is expected to reach a level of 357 billion dollars in 1980 as compared to 157 billion dollars in 1974. While the official capital flows have remained more or less stagnant during the last four years (in fact declined in real terms) the debt service plus profit remittances are estimated at 56 billion dollars in 1980 as compared to 35 billion dollars in 1977. There has been a significant deterioration in the terms of trade of the developing countries. While the world market price of manufactured exports of developed market economics increased by about 8 per cent per year during 1974—78 period, the prices of primary products increased by only 3.6 per cent during this period. As a result of actual decline in both the volumes and purchasing power of their exports and sharp rise in the prices of their imports, their balance of payment position came under heavy strain. The balance of payment gap of the non-oil exporting countries increased from 24.4 billion dollars in 1977 to as much as 43.4 billion dollars in 1979 which is expected to rise to as much as 55.3 billion dollars in 1980. According to the recent review of world economic outlook by UNCTAD, the failure to achieve the growth target of the strategy of the Second United Nations Development Decade may be attributed "largely to the inability to sustain import volume at appropriate levels—a consequence of adverse international economic developments which are outside of the control of these countries". Thus the progress in regard to implementation of these resolutions to reshape the World Economic Order has been poor and has not received adequate support from the developed nations.

In light of the dismal failure of the efforts to bring out a new international economic order, renewed efforts are being made to tackle the economic problems which are being confronted by the developing nations. The General Assembly has unanimously decided on December 15, 1979, to launch a new round of global negotiations on the key economic issues at a Special Session of the Assembly to be held in 1980. The main problems to be tackled at the negotiations will include raw materials, energy, trade, development, money and finance. The Resolution while recalling the goal of a new international economic order declared by the General Assembly in 1974 has urged all countries to commit themselves effectively to achieving through international negotiations and other concerted action, restructuring of international economic relations on the basis of principles of justice and equality in order to provide for steady economic development with due regard to development potential of developing countries. The new Resolution calls for action-oriented negotiations within a "specified time frame". The second Resolution passed by United Nations Assembly on December 15 designated the negotiating 152 Nations Economic Committee known as Committee of the Whole as the preparatory body for the Special Session likely to be held in August, 1980.

Specific Issues

In the forthcoming negotiations it would be imperative to take decision on specific issues including (i) adequate transfer of resources to the developing countries; achievement of an official aid target of 0.7 per cent of GNP of the developed countries ; (ii) increase in their share in the world trade of manufactures to 25 per cent within a specified period of time through removal of tariff and non-tariff barriers ; (iii) ensuring a reasonable price level for the export of raw materials and primary products and the imports of machinery equipment and other essential materials so as to improve their terms of trade ; (iv) their adequate representation in the decision making process particularly relating to reform of international monetary system, linkage of S.D.R.'s to Development Assistance etc. In regard to the transfer of resources specific mention may be made of two well conceived and carefully worked out proposals. The first relates to imposition of a brain drain tax on the incomes earned in the developed countries by skilled migrants from the developing countries. This

may be collected in the developed countries and passed on to the developing countries. The second proposal concerns the sharing by the developing countries in the profits of sea bed mining and the exploitation of the untapped wealth of the ocean bed. The introduction of an international income tax system as hinted by the World Bank President in Belgrade meet recently also needs consideration.

Oil Price Hike

One of the important factors which has put pressure on the balance of payments of the developing countries is sharp increase in the international price of crude oil since 1973. While the oil exporting countries are enjoying a very substantial surplus of balance of payments (estimated at about 45 billion dollars in 1980), the non-oil exporting developing countries are faced with larger deficit on balance of payments estimated at 55.3 billion dollars in 1980 as compared to 24.5 billion dollars in 1977. The Organisation for Economic Cooperation and Development (OECD) countries have been able to absorb the shock of unprecedented hike in the oil prices it is not within the realm of possibility for the non-oil exporting developing countries to do so. Some suitable mechanism has to be introduced to enable the later category of countries to meet their reasonable level of imports of crude oil at stable prices. The OPEC countries are reported to have decided to extend grant of $1.6 billion to those developing nations which have been hit by rise in the price of crude oil by 65 per cent during the current year. This subsidy will be financed out of OPEC Special Development Aid Fund created in 1976. This order of assistance in the form of grant by the OPEC Countries to the non-oil exporting countries will hardly meet their problem and relieve the strain on the balance of payment position unless the magnitude of grant from the Fund is of the order which is sufficient to meet the additional cost of imports. This arrangement can hardly be a substitute for a viable solution to this problem on a long-term basis. The question of adoption of dual pricing policy by the oil exporting countries needs serious and urgent consideration. For the non-oil exporting developing countries the price of imported crude oil may be frozen at the current level. This will call for a high degree of cooperation and understanding between the developing countries.

The success of the forthcoming negotiations would depend upon the extent of the cooperation which will be forthcoming from the developed countries. This in turn would depend upon the realisation by them that the North has a vital stake in the re-structuring of world economy as envisaged in the New International Economic Order (NIEO) and that accelerated development in the South would provide the necessary stimulous not only for the revival of the economic activity in the industrial nations but also for their stable and progressive growth. As rightly observed by Shri K. B. Lall "the level, the range and the value of exports from and imports into the developing countries have their impact on employment, industrial production and inflationary pressures in the industrialised economies." A study of commodity prices has revealed some correlation between their decline and economic recession in the industrial nations. The employment potential for the advanced economies of the development needs of the developing countries has now come to be more fully recognised. Future prospects of a number of industrial economies thus seem to depend to a significant extent on the solution of current problems in the sector of raw materials energy market outlets, debts and investments.

Attitude of Cooperation

Similarly, the developing countries should continue to adopt an attitude of cooperation in the forthcoming negotiations. Confrontation has been some times advocated by some developing countries as an instrument of getting more favourable terms of trade and aid. Such an approach if adopted beyond a limit, may not be conducive to achieve the basic objectives underlying the new international economic order and may prove counter-productive. It is gratifying to note that India has favoured this approach and has been able to persuade the Group of 77 to follow a path of conciliation and cooperation and not of confrontation in such negotiations.

It is also of paramount importance that the third world countries should continue to promote and strengthen mutnal cooperation among themselves in economic matters. It has often been argued that the economies of these countries are not of a complementary nature and their interest in the field of trade are divergent and even mutually conflicting and therefore the scope of mutual economic cooperation in these parallel economies is limited. This does not seem to be a correct appreciation of the situation. The varying levels of development, differences in the natural endowment and growth strategies in these countries can and do promote conditions of complementarity. What is, therefore, required is a close identification of areas of cooperation and a serious effort for finding out mutual and agreed solutions on the basis of principles of "non-discrimination, mutual help and accommodation".

There is another important aspect which needs to be emphasised in the context of new international economic order. Third world countries themselves will have to bring about major economic and social changes within their countries. The debate and discussions on the new international economic order is basically about transfer of goods and services and technology from one group of countries to another. The crucial question as to how this transfer of international aid and technology is deployed in improving economic and social conditions of the poor which constitute a significant proportion of the total population in third world has not yet received the attention it deserves. The developing countries would no doubt adopt concrete measures with a view to ensure that minimum needs of the poverty group are met.

The attempts made by United Nations and the world community to restructure international economic system in which the developing countries could march on the path of steady social and economic development and the disparity ratio in the per capita incomes in the rich and poor countries is reduced to the acceptable levels within reasonable period of time, have not yet borne fruit. The new international economic order enunciated in the Resolutions of the U.N. General Assembly of 1974 and 1975 is still a dream, the realisation of which would call for high degree of cooperation between the North and South. This is both a challenge and an opportunity to the leading statesmen of the world for ushering an era of accelerated growth, prosperity and hapiness of all the nations. ☐

World Economic Order: Historic Perspective

Suresh N. Kulkarni

CURRENT CONCERN for a just world economic order is a search for two possibilities. In the first place it reflects search for ways of alleviating inter-country disparities in levels of economic development which were created through immiserisation of the present day Third World by the Western countries in the years past. Secondly it, reflects the search for ways for super powers to coexist through economic-cultural cooperation and at the some time to maintain their ideological identities. In other words, the projected world order aims at narrowing the international development gaps and converging the different economic systems towards mutual survival. In this article we will try to (a) give the historical perspective to the current search for world order; (b) discuss the role of international growth in creating worldwide equity; (c) enlist some prominent issues that require research by economists.

The proposed new International Economic Order aims at narrowing the international development gaps and converging the different economic systems towards neutral survival. In this article, the author attempts to present the historical perspective to the search for a new world order. He also discusses the role of international growth creating worldwide equity.

The prevailing disparities in economic development between First World countries and Third World countries have roots in international economic history and therefore are not merely contemporaneous Their seeds were sown in the nineteenth century when the industrialising countries of the West started colonising Asia, Africa and Latin America. The consequences of colonisation have been extensively studied. Three major theses have been propounded by economists which together constitute neo-classical theory of immiserisation. They are :

(1) Drain Theory (Dadabhai Nauroji)

(2) Secular Stagnation Thesis demonstrating worsening of terms of trade for the poor countries (Prebisch-Singer thesis).

(3) Backwash Effect (Myrdal).

As a result of exploitation of minerals and plantation crops the poor countries witnessed the emergence of dualistic structure in their economies which still persists. All the three theses point out that exploitation brought about structural disequilibrium at the factor level which the colonisers exploited to the full

Dependency Theory

Radical economic historians in the Dependency Theory 1960s superseded this theory with a thought-provoking diagnosis of the international immiserisation. This is known as Dependency Theory. It concentrated on fundamental capitalist relations of exchange and production and argues that the developed capitalist nations have transformed the underdeveloped countries into dependent territories. Secular stagnation and backwash effect are only manifestations of the unequal relations which were forced upon the colonies. Some of the prominent proponents of this neo-Marxist theory are Paul Baran, (The Poltical Economy of Growth, New Monthly Review Press, New York 1957), E Mandell (Marxist Economic Theory, New Monthly Review Press, New York, 1972), E. Preobazhensky (The New Economics, Oxford, 1965), G. Arrighi and J. S. Saul (Essays on the Political Economics of Africa, New Monthly Review Press, New Yörk, 1973), A. G. Frank (Capitalism and Underdevelopment in Latin America, Penguin Books, 1971) B. Chandra (The Rise of Economic Nationalism in India, New Delhi, 1966). The latest exposition of this theory is by Frank (Dependent Accumulation and Underdevelopment, Macmillan, London, 1978). He, in this work, combines "the global historical vision of Adam Smith and the dialectical historical analysis of Karl Marx" and advances a structural theory for spatial and temporal unequal distribution of global growth of capital and income between countries. Under this approach the world capitalist development is divided into three periods, labelled variously by various authors: 1500-1770, 1770-1830, 1830-1930. The contemporary period is a continuation of the last period. The distinguishing characteristics of these periods are : the first period witnessed unequal exchange for unequal values ; it was a period of nascent capitalism with de jure free competition and de facto monopoly. The second period witnessed equal exchange for equal value; it was a period of de facto free competition. The third period witnessed unequal exchange for equal values; it was a period of monopoly capitalism. The contemporary period, as pointed above, is a continuation of the third period with the difference that whereas in the third period unequal exchange was practised through force of arms, in the current period it is practised through manipulation of international financial relations, e.g. devaluation, bilateral fixation of exchange rates, linking of gold with only dominant currencies and some camouflages like

Suresh N. Kulkarni, is with Indian Council of Social Science Research, New Delhi.

SDRs, AMUs etc. Interestingly enough India presents the most prominent illustration of this theory of dependence imposed by the British "in a million ways" (Frank, 1978, p. 147; also see pp. 92-139). The basic mechanism underlying unequal-exchange-for-equal-value premise is one of inequality in wage levels, between developed and developing countries. Since wages are lower in developing countries the developed countries gain when the products are traded. The resulting surplus enables them to accumulate. To what extent this is true can be assessed only empirically. The historical basis, that is the origin of original differences has been studied at the theoretical level. Also its role in developing underdevelopment has been studied. The need today is to establish comtemporary relevance of the theory, and if found relevant, to quantify wage level gap and its influence on inter-country differences in level of development. Unless we have knowledge about this, it is not possible to devise policy measures to bring about equality.

Common Denominator

We are not debating the comparative merits of the neo-classical and neo-marxist theories. The moot point rather is : is there a common denominator to them ? The answer is Yes. International trade has been the singular force behind underdevelopment. Both the theories start from this point. Both agree that it was through trade that developed countries could siphon off surplus and accumulate capital.

Coming to the question of what impact international economic growth has had on international economic equality. It is obvious that while world GNP has multiplied fourfold during 1947—1977, its distribution has remained uneven. This has been mainly due to monopolisation of complex technology by the highly industrialised countries. The result has been that average per capita GNP in dollars in 1977 was 150 for developing countries and 400 for developed countries. David Morawetez (*Twenty Five Years of Economic Development*, 1950 *to* 1975, World Bank 1977) has shown the gap has widened in both absolute and relative terms. Growth of population is generally considered as responsible for this situation. But that is not the entire explanation. Part of the explanation should be sought in monopolisation of world's exhaustible and non-exhaustible resources. It is essential that world-wide equity be brought about by internationally-agreed-upon restrictions on indiscriminate use of resources and conspicuous consumption. The accent should be not on equalising GNP but what Hirsch calls 'Net National Satisfaction' in terms of health, housing, education and employment. In this cooperative venture there is no scope for debating the role of state. It only calls for pragmatic trade off between the mindless growth in GNP and need for equality through qualitative growth.

The importance of trade as source of development of underdevelopment was pointed out in the last but one para. It is necessary to distinguish its historical importance during the four periods. Upto 1930 the metropolises appropriated world resources through trade. Financial relations were largely governed by the rules of the Gold Standard game. Under this game multilateral trade and exchange prevailed. After 1930 the leading country found the standard unworkable (That is not the place to go into its causes). This led to emergence of bilateral agreements so much so that economists like Joan Robinson went to the extent of remarking that international (multilateral) equilibrium rate of exchange is a chimera. Around the end of the Second World War, countries of Asia, Africa and Latin America began emerging as independent states. In the new set up, and it is true today as well, the only way left for developed countries to continue as dominant partners was to strengthen hold on international financial transactions. This has led to the creation of key-currency diplomacy. To put it technically, controlling the mechanics of balance of payments, through manipulations in exchange rate, gold-key currency ratio and interest rates on short-and long-term capital movements, is found necessary for controlling balance of merchandise. There are four issues in the development of post-World War II international finance : (i) international liquidity ; (ii) fixed Vs floating rates ; (iii) multilateral Vs bilateral exchange rates ; and (iv) convertibility. One key factor that has hindered policy decisions on any or all of the four issues is the lack of confidence. When confidence is slack, speculation goes on spree. Loss of confidence is occasioned by the fact that reserve curencies defacto become less and less convertible. This is because countries which have surplus of key currencies on account of trade surplus find no use for them. They therefore, insist on payment in gold. This trend was initiated by France under deGaulle. Reduced convertibility reduces the effectiveness of fixed rate system. As the demand for gold intensifies gold traders become speculocratic, more because dollar devaluation in terms of gold is unpredictable under existing arrangements. The two-tier price system announced in 1968 by Gold Pool countries did not prove successful because : (a) it has not been able to demonetise gold (b) by delinking the increase in gold output and its acquisition has reduced liquidity. The newly mined gold could not be diverted to free market for pulling down its price. The institution of SDR system has not recovered international confidence either. It provides only partial solution to the problem.

The reasons are two-fold. Firstly, the system represents, what Zolotas has called, "a compromise of compromises" (Speculocracy and the International Monetary System, Athens, 1969, p. 27). Secondly, it is difficult to forecast the quantum of liquidity demand whereas such a forecast is absolutely essential to build SDR reserves for current year. The fact that Gold Exchange Standard still functions, despite these weaknesses, is attributable to uneven growth of inflation and productivity. This points to poor harmonisation of economic policies of member-nations. At the same time any attempt to coordinate these policies amounts

"To bring about a New International Economic Order, there shall be an end to the vestiges of colonialism, to unequal relations between the developing countries and the states of the capitalist system, to the rule of imperialist monopolies, transnational corporations and cartels which continue the ruthless exploitation and plundering of the people and natural resources of the developing countries."

—Mr. Yakov Malik,
USSR'S representative in the
UN General Assembly.

to encroaching upon the countries' autonomy. Frankly, solutions are very difficult, if not impossible. It only highlights the need for informal understanding and action if we hope for a world economic order.

Three New Factors

We have described the international financial situation because today, unlike in the past century, trade depends upon financial mechanism. But coming to identification of issues which stilll wait for unequivocal answer, it may be seen that a few issues predominate the scene. We try to enumerate them below.

(1) Three new factors have emerged on the international scene could play a crucial role in which shaping the future economic order. They are : multinationals, economic groupings and non-institutional bilateral agreements. We are not mentioning trade and non-trade barriers because UN agencies have some authority to negotiate them, whereas the first three factors completely transcend them. The behaviour of these cannot be understood except through application of game theory.

(2) In open system with bilateral relations the effect of a given trade policy on trade flows cannot be predicted, even in two country analysis, knowledge in this respect can grow only through case by case studies in which researcher will keep the effect of 'other' countries' trade policies constant and study the effect of mutually devised trade policies of two countries. In the next step 'other' trade policies may be introduced and extend the same analysis. And so on The most important advantage of such an approach would be that it will show whether reciprocity has an edge over non-reciprocity. Pure theory has a number of positive and normative theorems on reciprocal trade but their empirical validity is not tested on large scale. The question of reciprocity is hotly debated today. The developing countries insist on non-reciprocity It is now established as part of GATT and constitutes their position in on-going Multilateral Trade Negotiations. This reflects their desire for protectionist trade policy. However there are economists who argue that reciprocity may be advantageous to these countries themselves. Reciprocity generates "equivalent benefits", however ambiguous they may be. The basic argument is that it helps them in avoiding misallocation of resources and discrimination against exports. (cf. OECD Development Centre studies by Scitovsky, Little, Scott and others). Bhagwati and Krueger also demonstrate this point, who show that trade liberalisation, which is the obverse of reciprocity, lessens market distortions. As part of our search for international economic order these issues must be pursued to full extent.

(3) Another area of research which has attracted sponsoring institutions so far is the study of comparative economic systems. Here too a topic which has received still less attention is comparative analysis of public consumption expenditure in capitalist and communist nations. Such a study would be useful for the reason that it may enable us to know whether systemic differences are narrowing over time or not. In this connection there is another issue which is worth pursuing. One can examine Musgrave's thesis that pattern of consumption expenditure on goods and services not possessing public-good property differs between capitalist and communist nations (R.A. Musgrave, Fiscal Systems, New Haven, 1968).

(4) Studies on nature and cause of international investment are few and far between. Bergsten and Mathieson aptly diagnose the situation : "There have been few systematic efforts to develop policy proposals which distribute the costs and benefits of international investment on any given set of criteria" (The International Economic Order, a Report of the Ford Foundation, 1973, p. 19).

(5) There are two very specific hypotheses which are both fundamental and policy-containing in connotation. Let us call them international development paradox-1 and international development paradox-2. They are called paradoxes only to mean that they run contrary received notions about the role of wage levels and export surplus.

First paradox : Disparities in levels of development in the contemporary world are not the determinant but the consequence of high wage levels in developed countries and low wage levels in less developed countries. To be sure this hypothesis assumes that the prevailing wage disparity and wage differential have been brought about by historical forces.

Second paradox : If the exports of a developing country exceed their imports, the surplus contributes to the growth of capital accumulation in the developed countries.

And finally a suggestion. There has to be a monitoring system which would keep researcher informed about facts and methodologies of the continuing studies. This would not only serve the purpose of dissemination but also the purpose of minimising duplication of studies. It would, above all, enable to build stock of interdisciplinary knowledge on international economic order. Various ways exist of developing such a system. One, and perhaps generally acceptable way would be to undertake periodic surveys of the progress. Surveys help both sponsoring institutions and individual researchers in sizing up theoretical and empirical gaps in knowledge about world order. □

"The idea of a New Order has meaning only if we fully understand that we must all work at achieving it. And I say "all" without exception because it is true that no arbiter is here to sort out the problems. There is no doctor for civilisation, for we are all our own doctors, entrusted with the task of using reason and conciliation to contain the selfish inclinations of our very nature."

—Mr. Louis de Guiring
French Ambassador in the
UN General Assembly.

Indian Economy in World Perspective

V. G. Bhatia

THE INDIAN ECONOMY has made considerable progress since independence. The growth and diversification of the economy, particularly since the planning era started, has been quite impressive and it is clearly much stronger, more resilient and self-reliant today than at the beginning of the planning era. Between 1950-51 and 1977-78 while the population has increased at an annual compound growth rate of 2.1 per cent, the net national product at factor cost has increased at the rate of 36 per cent, agricultural production has increased at the rate of 2.9 per cent, irrigated area has increased at the rate of 4·6 per cent, mineral production has increased at the rate of 4.4 per cent, and industrial production at the rate of 5.8 per cent,. The rate of net capital formation which was 5.5 per cent at the beginning of the planning era was 16.5 per cent during the Fifth Plan. India's current savings rate is 22.4 per cent of GNP and considering our low per income this is certainly an impressive performance. The foodgrain production which was 50.28 million tonnes in 1950-51 reached the level of over 131 million tonnes in 1978-79, which is quite an impressive performance by any standards, although the success in increasing production of different crops has been varying. Thus between 1950-51 and 1978-79 wheat production increased at the compound rate of 6.07 per cent, while that of rice 3.54 per cent, Jowar 2.96 per cent, bajra 2.5 per cent, and other cereals 4·7 per cent. The performance in the production of pulses has been the least impressive—the production between 1950-51 and 1977-78 of pulses increased from 8.41 million tonnes to 11.97 million tonnes i.e., at a compound growth rate of only 1.23 per cent. On the other hand, sugarcane production increased from 57.05 million tonnes in 1950-51 to 176.97 million tonnes in 1977-78 i.e., a compound growth rate of 4.82 per cent. The growth of cotton production also was impressive, namely, from 13.44 lakh bales in 1950-51 to 72.43 lakh bales in 1977-78, thus recording a compound growth rate of 3·26 per cent, while major oilseeds production increased from 5.16 million tonnes in 1950-51 to a little over nine million tonnes in 1977-78 recording a compound growth rate of 2.08 per cent. On the other hand jute production increased from 33.09 lakh bales in 1950-51 to 53.61 lakh bales in 1977-78, compound growth rate working out to only 1.80 per cent.

Dr. Bhatia is Adviser (International Economics), Planning Commission. The views expressed are of the author

On the industrial front also the Indian economy has made considerable progress. Between 1950-51 and 1977-78, electricity generation increased at the annual compound growth rate of 9.9 per cent, finished steel production at the rate of 7.7 per cent, cement production at the rate of 7.6 per cent, commercial vehicles at the rate of six per cent, aluminium at the rate of 15·1 per cent, paper and paper board at the rate of 8.2 per cent and cloth production (mills sector) at the rate of 3.1 per cent. The fertiliser production increased from 9,000 tonnes of nitrogen to two million tonnes of nitrogen. There has, of course been a maqor development in the production of engineering goods also.

Apart from the quantitative measures of growth the development of Indian economy in qualitative terms has been even more impressive. There has been considerable development of Indian science and technology and the industrial capability of the economy. India, today is one of the 10 most industrially developed countries in the world and among the first five in terms of the number of trained people. The qualitative achievements are :—

(a) eradication of epidemic diseases and the striking increase in the life expectancy of the people;
(b) attainment of self-sufficiency in foodgrains and near self-sufficiency in raw cotton and raw jute ;
(c) establishment of a large, diverse and increasingly productive capital goods production base;
(d) expansion in the transport and communication net work, power supply and other infrastructure ;
(e) an impressive increase in the availablity of trained scientific and technical man-power covering a wide range of skills; and
(f) considerable reduction of the dependency on external capital flows that characterised the investment plans from the 60s to the mid-70s.

The World Perspective

As per the World Development Report 1979 brought out by the World Bank in August 1979, the per capita income of India (GNP per capita) in 1977 was 150 US dollars against Pakistan 190 dollars, Sri Lanka 200 dollars, Kenya 270 dollars, Indonesia 300 dollars, Egypt 320 dollars, China (People Republic) 390 dollars, Nigeria 420 dollars, Thailand also 420 dollars, Philippines 450 dollars, Zambia also 450 dollars, South Korea 820 dollars, Syria 910 dollars,

Cuba also 910 dollars, Malaysia 930 dollars, Algeria 1,110 dollars, Mexico 1,120 dollars, Jamaica 1,150 dollars, Taiwan 1,170 dollars, Brazil 1,360 dollars, Argentina 1,730 dollars, Yugoslavia 1,960 dollars, Trinidad 2,380 dollars, Greece and Singapore 2,880 dollars. All these countries are clubbed together under the heading of developing countries giving the impression that they all more or less belong to the same category. It will, however, be seen that India is among the poorest of the poor, in fact India is shown as 16th from the bottom in terms of per capita income. Notable among the countries which have lower per capita income than India are some of our neighbours—Bhutan (80 dollars), Bangladesh (90 dollars), Nepal (110 dollars) and Burma (140 dollars), other countries in this list being Cambodia, Ethopia, Somalia, Zaire and Malawi. It may be mentioned that the gap between the incomes of the developing countries like India and the developed countries is really enoromous, the per capita income of UK in 1977 was 4,420 dollars, Japan 5,670 dollars, France 7,290 dollars, Australia 7,340 dollars, Federal Republic of Germany 8,160 dollars, the United States 8,520 dollars, Sweden 9,250 dollars and Switzerland 9,970 dollars, Per capita income of Kuwait was, of course, the highest, being 12,270 dollars. Even among the Communist countries, the per capita income is qutie high, that of USSR being 3,020 dollars, Poland 3,150 dollars, Czechoslovakia 3,890 dollars, and German Democratic Republic 4,680 dollars.

per cent, South Korea 10.4 per cent, Syria 7 per cent, Malaysia 7.8 per cent, Brazil 9.8 per cent, Yugoslavia 7.1 per cent and Singapore 8.6 per cent. Even the rate of growth of People's Republic of China over this period was 5.8 per cent almost twice that of India, Indonesia's growth rate was more than 2.5 times ours and South Korea almost 3.5 times ours. Many of these countries which were way behind us 10 years ago, by virtue of the rapid growth rate they have achieved, have surpassed us.

Education and Life Expectancy

India is proud of the progress made in education and i nLife expectancy, which is quite impressive when compared with the position we were in at the time of independence. However, here again we do not compare very favourably with most other countries of the world, even developing countries of the world. Thus while in India adult literacy rate achieved by now (the figures relate to 1975) is 36 per cent the situation in most other developing countries is considerably better except some of our neighbouring countries in the sub-continent Sri Lanka had the adult literacy rate of 75 per cent as far back as 1960. Indonesia has reached the adult literacy rate of 62 per cent in 1975, Burma 67 per cent, Viet Nam 87 per cent, Tanzania 66 per cent, Egypt 44 per cent, Thailand 82 per cent, Philippines 87 per cent, South Korea 91 per cent, Malaysia 60 per cent, Mexico 76 per cent, Argentine 93 per cent, Yugoslavia 85 per cent, Trinidad and Tobago 95 per cent, Singapore 75 per cent and Cuba 96 per cent. Most of the developed countries, both in the East and the West have adult literacy rates of almost 100 per cent. The figures for People's Republic of China, however, are not available. It is quite clear that bulk of world illiterate adults live right here on this sub-continent just as the bulk of the world's poor live here. (Sri Lanka is, however, an exception in this respect). But most other countries, developed and developing, are generally ahead of us in this respect too. It may also be mentioned that the progress made in this respect in most other countries is also considerably better than ours if we compare adult literacy rates in 1960 and 1975. Thus adult literacy improved in India from 28 per cent of population in 1960 to 36 per cent in 1975, in Pakistan it improved from 15 to 21 per cent, in Tanzania from 10 to 66 per cent, Kenya from 20 to 40 per cent, Indonesia from 39 to 62 per cent, Egypt from 26 to 44 per cent, Thailand from 68 to 82 per cent, Syria from 30 to 55 per cent, Tunisia from 15 to 55 per cent, Malaysia from 53 to 60 per cent, Algeria from 10 to 35 per cent, Turkey from 38 to 60 per cent, Taiwan from 54 to 82 per cent, Brazil from 71 to 76 per cent, Yugoslavia from 77 to 85 per cent, Iran from 16 to 50 per cent and Kuwait from 47 to 60 per cent.

"A realignment of power indeed has occurred : the New International Economic Order is a phenomenon not just a slogan; attempts to turn the clock back are likely to be only disruptive, not successful."

—UN Committee for developing planning.

It will thus be seen that when we speek of India being a poor country, we are really the poorest of the poor. We cannot even explain away our low per capita incomes, as many of us tend to do, by saying that we are a large country and we cannot compare ourselves with other smaller countries. As noticed, People's Republic of China with a population of 886 millions in mid-1977, Indonesia with a population of 134 millions in mid-77, Egypt and Nigeria with a population of 79 millions, Philippines 45 millions and Thailand 44 millions are not exactly small countries. We tend to compare India with countries like Brazil and some other Latin American countries because they have also developed industries substantially. It is, however, well to remember that there is hardly any comparison when we look at the per capita incomes. As already mentioned, Brazil with a population of 116 millions in mid-77 had a per capita income of 1,360 dollars and Argentina 1,730 dollars i.e., almost 10 times ours, and Venezuela with per capita income of 2,660 dollars, Trinidad 2,380 dollars and Singapore 2,880 dollars have per capita incomes which is almost 20 times ours.

Not only is our per capita income low, but the average annual growth rate of GDP in India between 1970 and 1977 compares rather poorly with the performance of other developing countries ; while in India the rate was 3.0 per cent, that of Pakistan was 3.6 per cent, Sri Lanka 3.1 per cent, Kenya 6.2 per cent, Indonesia 7.7 per cent, Egypt 7.9 per cent, Thailand 7.1 per cent, Nigeria 6.2 per cent, Phillippines 6.4

In 1977 life expectancy at birth in India was 51 years which is, of course, a much better figure than what we started with at the time of independence.

However, the life expectancy at birth in 1977 in Viet Nam was 62 years, Sri Lanka 69 years, Thailand 61 years, Philippines 60 years, South Korea 53 years, Syria 57 years, Malaysia 67 years, Jamaica 70 years, Brazil 62 years, Argentina 71 years, Yugoslavia 69 years, Trinidad 70 years, Singapore 70 years and Kuwait 69 years, Many of our neighbours, however, have life expectancy levels similar to ours, namely Bangladesh 47 years, Nepal 45 years, Burma 52 years, Afghanistan 42 years, Pakistan 51 years, Indonesia, Egypt, Nigeria and Zambia have similar to ours.

Agriculture Progress

We are, of course, rightly proud of progress made on the agricultural front. Still it is sad to note that daily per capita calorie supply in India, both in absolute terms and as percentage of requirement, are lower than most other developing countries. While in India daily per capita calorie supply was 1976 (figures relate to 1974 for all the countries) Bangladesh's figure was 2024, Bhutan 2078, Nepal 2086, Burma 2223, Viet Nam 2397, Afganistan 2022, Pakistan 2146, Tanzania 2003, Sri Lanka 2019, Kenya 2117, Indonesia 2126, Egypt 2637, Nigeria 2085, Thailand 2382, Philippines 1971, Zambia 2052, South Korea 2630, Syria 2597, Malaysia 2574, Jamaica 2664, Mexico 2727, Brazil 2516, Argentina 3408, Yugoslavia 3462, Iran 2368, Trinidad 2530, Singapore 2819, Taiwan 2780, People's Republic of China 2330, Cuba 2712, and Greece 3283. Except Japan, all other developed countries had daily per capita aclorie supply of well over 3,000 the figure for Japan being 2835. As percentage of requirement, daily per capita calorie supply (figures again relate to 1974) in India was 89 per cent, that of Bhutan 94 per cent, Bangaladesh 92 per cent, Nepal 95 per cent, Burma 103 per cent, Viet Nam 111 per cent, Pakistan 93 per cent, Sri Lanka 91 per cent, Kenya also 91 per cent, Indonesia 98 per cent, Egypt 113 per cent, Thailand 107 per cent, South Korea 112 per cent, Syria 104 per cent, Malaysia 11.5 per cent, Mexico 117 per cent, Jamaica 119 per cent, Brazil 105 per cent, Argentina 129 per cent, Yugoslavia 136 per cent, Trinidad 105 per cent, Singapore 122 per cent, Taiwan 119 per cent, People's Republic of China 99 per cent, and Cuba 117 per cent. It will thus be noted that despite the considerable progress that we have made on the food front, we continue to be among the world's least fed people, both in terms of the absolute daily per capita calorie supply as well as in terms of requirement.

Industrial Development

The average annual growth rate of industry in India between 1960 and 1970 was 5.5 per cent and the corresponding figure for 1970 to 1979 was 2.6 per cent. To avoid confusion let us call these periods as 60s and the 70s, the 70s figures being only up to 1977. The rate of growth of industry in Bangladesh during the 60s was 7.9 per cent and during the 70s 4.2 per cent, that of Pakistan 10 per cent during the 60s and .6 per cent during the 70s, that of Sri Lanka 6.7 per cent during the 60s and 2.8 per cent during the 70s, that of Indonesia 5 per cent during the 60s and 12.9 per cent during the 70s; that of Pakistan 5.4 per cent during the 60s and 5.2 per cent during the 70s; that of Nigeria 13.8 per cent during the 60s and 10.3 per cent during the 70s; Thailand 11.7 per cent during the 60s and 10.3 per cent during the 70s; Philippines 6 per cent during the 60s and 8.7 per cent during the 70s; Egypt's 17.2 per cent during the 60s and 17 per cent during the 70s; Syria 5.9 per cent during the 60s and 11.1 per cent during the 70s; Malaysia 9.3 per cent during the 70s (figures for 60s are not available); Mexico 9.3 per cent during the 60s and 6.2 per cent during the 70s; Brazil 10.7 per cent during the 70s (figures for 60s are not available); Yugoslavia 6.3 per cent during the 60s and 9.2 per cent during the 70s; Singapore 12.6 per cent during 60s and 8.6 per cent during the 70s; Taiwan 16.4 per cent during the 60s and 12.2 per cent during the 70s; figures for People's Republic of China and Cuba as well as other centrally planned economic are not available. It will thus be seen that in the world perspective India's growth on industrial front has not really been that good as we tend to think. In fact, there are a large number of other developing countries, both in our neighbourhood as well as elsewhere who have much greater progress on the industrial front than we have.

Now let us take a look at the level of industry which we have reached in terms of industry as a percentage of gross domestic product. Figures available are for 1960 and 1977, thus covering a span of 18 years. Industries' contribution to gross domestice product in India was 20 per cent in 1960 and improved to 25 per cent in 1977. Corresponding improvement in Bangladesh was from 8 per cent to 13 per cent, Burma remained around 12 per cent, Pakistan from 16 per cent to 23 per cent, Tanzania from 11 to 16 per cent, Sri Lanka from 16 to 21 per cent, Kenya from 18 to 20 per cent, Indonesia from 14 to 34 per cent, Egypt from 24 per cent to 30 per cent; Nigeria from 11 to 43 per cent; Thailand from 18 to 29 per cent; Malaysia from 18 to 29 per cent; South Korea from 19 to 35 per cent; Tunesia from 18 to 32 per cent; Malayisa from 18 to 29 per cent; Algeria from 33 to 57 per cent; Mexico from 29 to 36 per cent; Jamaica from 36 to 37 per cent; Brazil from 35 to 37 per cent; Argentina from 38 to 45 per cent; Trinidad from 46 to 62 per cent; Singapore from 18 to 35 per cent; Yugoslavia remained at 45 per cent and Taiwan from 29 to 46 per cent. (Figures for People's Republic of China and other centrally planned economies are not available). It will thus be seen that despite to considerable progress we have made on the industrial front, our achievements in indsutry sector also do not compare so well with other developing countries as we tend to think; or rather many other developing countries have shown much better performance on the industrial front as well, compared to India.

Foreign Trade

Let us now take a look at the performance in the foreign trade sector. Here again, the figures are available for the 60s (1960 to 1970) and the 70s (1970 to 1977). India's exports increased at the rate of 3.1 per cent during the 60s and 6.4 per cent during 70s, the performance which many of us are quite happy about. Pakistan's exports increased at the rate of 8.2 per cent during the 60s whereas their growth during the 70s was negative (—) 3.0 per cent. Same

is true of Sri Lanka—their exports increased at the rate of 4.6 per cent during the 60s but declined during the 70s—the rate of growth being negative (—) 5.3 per cent. Indonesia on the other hand increased exports at the rate of 3.5 per cent during the 60s and 7.5 per cent during the 70s. Thailand's exports increased at the rate of 5.2 per cent during the 60s and 12.1 per cent during the 70s, that of Philippines 2.2 per cent during the 60s and 5.0 per cent during the 70s; South Korea 35.2 per cent during the 60s and 30.7 per cent during the 70s; Malaysia 6.1 per cent during the 60s and 5.2 per cent during the 70s; Brazil 5.0 per cent during the 60s and 6.5 per cent during the 70s; Yugoslavia 7.8 per cent during the 60s and 5.4 per cent during the 70s. Greece 10.7 per cent during the 60s and 13.8 per cent during the70s; Singapore 4.2 per cent during the 60s and 9.8 per cent during the 70; Cuba 3.9 per cent during the 60s and 9.4 per cent during the 70s; and Taiwan 23.7 per during the 60s and 16.7 per cent during the 70s. The export performance of most of the industrialised countries, both of the East and the West, was also rather impressive. Soviet Union's exports increased at the rate of 8 per cent during the 70s (figures for 60s are not available); those of Poland at the rate of 10 per cent during the 60s and 9.9 per cent during the 70s; East Germany at the rate of 8.3 per cent during the 60s and 8 per cent during the 70s; Hungary at the rate of 9.7 per cent during the 60s and at the rate of 9.3 per cent during the 70s, Bulgeria at the rate of 14.3 per cent during the 60s and at the rate of 10.6 per cent during the 70s

Similarly, the rate of growth of exports of Japan during the 60s was 17.5 per cent and during the 70s 10.5 per cent, those of West Germany increased at the rate of 10.2 per cent during the 60s and 7 per cent during the 70s; and U.S.A. 6 per cent during the 60s and 6.9 per cent during the 70s. It will thus be seen that even on the export front our performance is not so good as that of most of other countries, both developing and developed.

Now let us take a look at the terms-of-trade situation in India and other countries of the world. Taking 1970 equal to 100, the figure for terms-of-trade in 1977 in India was 83, that of Bangladesh 78; Burma also 83; Afghanistan 135; Pakistan 80; Tanzania 127; Sri Lanka 141; Kenya 132; Uganda 159; Indonesia 253; Egypt 93; Thailand 75; Philippines 68; South Korea 76; Tunisia 137; Malaysia 114; Mexico 119; Taiwan 80; Brazil 118; Yugoslavia 94; Cuba 71; Poland 103; Japan 76; U.K. 85; Ireland 101; France 93; Federal Republic of Germany 101; Canada 106; United States 79 and Switzerland 104. Of course the terms-of-trade of oil exporting countries have improved considerally. Again taking 1970 equal to 100, the figure for terms-of-trade in 1977 for Saudi Arabia was 422; Lybia 316; Kuwait 449; Iran 414; Mexico 119 ; Syria 149 ; Nigeria 331 and Ecuador 158. It is thus clear that there are a large number of countries, both developed and developing who have managed to ensure that despite the very high price increase in oil which they import, their terms-of-trade have not declined much and there are, of course, a large number of other countries, both developing and developed, whose terms of trade have declined considerably. But there are countries like Sri Lanka, Ethiopia, Afghanistan, Tanzania, Kenya, Tunisia, Malaysia, Brazil who have actually improved their terms-of-trade by 1977 despite the steep increase in the price of oil which they import. There are perhaps some lessons for India in these figures as well.

Diagnosis and Remedy

Despite all the efforts that have been put in by India to develop her economy and despite the fact that by our own standard the progress has been fairly impressive, in the World Perspective the performance of our economy does not come up to the standards even of other developing countries. India is still among the poorest of the poor in the whole world including in comparison with other developing countries. Bulk of the world poorest population lives in India and in the sub-content. The bulk of the world's illiteracy is also to be found in India and our life expectation as well as per capita consumption of calories or food availability is lower than most other developing countries. Even on the industrial front it does not measure up in comparison with the performance in industrial development shown by other developing countries. Same applies to our performance on the foreign trade front. Even for certain other aspects, which have not been quantified above, there is little doubt that we are lagging behind. For example, in the number of sick, suffering and blind and other handicapped people, the situation in this country is really bad.

It is high time to sit up and ask ourselves the question as to how is it that despite the tremendous efforts put in by the people of India we have barely managed to stand still and our per capita income as already mentioned is among the lowest in the world, and even this low figure does not truly reflect the miseries and the sufferings of the bulk of the population in India since their incomes are even lower. Furthermore, despite tremendous efforts put in, including the very high rate of domestic savings, the growth of per capita income has been practically negligible as already mentioned over the annual growth of per capita GNP between 1960—71 in India was only 1.3 per cent per annum. At this rate even by the turn of century we would not catch up with other developing countries like Indonesia or Egypt not to speak of Peoples' Republic of China or Taiwan or Philippines or Thailand or South Korea. The question of comparing ourselves with countries like Cuba or Malaysia or Jamaica or Latin American countries like Brazil or Argentina or Mexico just does not arise even though we consider ourselves among the developing group and sometimes among the more developed among the developing countries.

Saving Rates

We certainly have not been lacking in belt-tighhening, self-help and self-reliance. Our gross domestic saving rate as a percentage of GDP increased from 14 per cent in 1960 to 22 per cent in 1977, Pakistan's from only 5 per cent to 8 per cent, Burma's declined from 11 per cent to 9 per cent and Sri Lanka's on the other hand increased from 11 per cent to 20 per cent. It may, however, be noted that there are a large number of other countries who have increased their

domestic saving rates significantly, at a higher rate than India, e.g., Indonesia's gross domestic savings increased from 8 per cent of GDP in 1960 to 22 per cent in 1977, Kenya's increased from 17 per cent to 25 per cent, Egypt from 12 per cent to 15 per cent, Thailand from 17 per cent to 21 per cent, Philippines from 15 per cent to 25 per cent, South Korea's domestic savings rate was also 25 per cent of GDP in 1977 (figures in 1960 not available), Malaysia's increased from 27 per cent to 31 per cent, Taiwan's from 13 per cent to 31 per cent, Brazil's domestic savings rates however, declined from 21 per cent to 12 per cent whereas Argentina's, increased from 20 per cent to 23 per cent and Singapore from 3 per cent to 29 per cent. It is thus to be seen that there are large number of developing countries which have increased their savings rate and many of them have reached a figure in 1977 which is even higher than India's, though of course among the low income countries i.e., say with per capita income of 300 and below India, Indonesia and Sri Lanka are among few countries who have really put in this order of effort.

Per Capita Investment

Perhaps the answer lies simply in the fact that, despite our belt-tightening, because of our low income base and thanks to the policy of self-reliance, our per capita investments have been rather low; thus while per capita investment in India in 1977 was of the order of 31 dollars the corresponding figure for Pakistan was 36 dollars, Taiwan 38 dollars, Sri Lanka 34 dollars, Kenya 57 dollars, Indonesia 53 dollars, Egypt 77 dollars, Thailand 109 dollars, Philippines 135 dollars, Nigeria 130 dollars, South Korea 213 dollars, Malaysia 214 dollars, Mexico 224 dollars, Brazil about 300 dollars, Taiwan 315 dollars, Argentina 329 dollars and Yugoslavia 647 dollars. Explanation of why despite such tremendous efforts that we have made, we are still not able to tackle the problem of poverty in this country may well lie in the simple cliche of the vicious circle of poverty, viz., because we are poor, our ability to get out of the vicious circle of poverty is also limited no matter how much belt-tightening we are able to do. The question, therefore, arises how is it that so many other countries have managed to break out of this vicious circle of poverty.

Policy of Self-reliance

There is little doubt that we have indeed followed the path of self-reliance, perhaps with a vengeance. This is clear from the figures of the external capitals in flows, outstanding foreign debt and the burden of debt service of India vis-a-vis other countries. Thus in 1977, debt service as a percentage in GNP in India was only 0.8 per cent whereas the corresponding figure for Pakistan was 2.1 per cent, Sri Lanka 4.4 per cent, Indonesia 2.9 per cent, Egypt 8.8 per cent, Brazil 1.5 per cent, Mexico 5.2 per cent, South Korea 3.7 per cent, Taiwan 2.4 per cent, Phillippines 1.3 per cent, Thailand 0.7 per cent, (which is surprising).

The debt service as percentage of exports of goods and services for India in 1977 was 10.5 per cent (the corresponding figure in 1970 was 22 per cent), Pakistan's debt service as of exports in 1977 however, was 13.6 per cent, Sri Lanka 14.6 per cent, Indonesia 11.9 per cent, Egypt 22.8 per cent, Philippines 6.4 per cent, Zambia 18.6 per cent, South Korea 8.7 per cent (against 18.9 per cent in 1970), Peru 30.3 per cent, Mexico 48.1 per cent, Chile 52.4 per cent, Brazil 18.4 per cent and Argentina 15 per cent.

It is also interesting to note that most of the fast developing countries have been piling up large current account deficits. In 1977, while India had a current account surplus before interest payment on external public debt of 1.874 billion dollars, Bangladesh had a deficit of 26.5 million dollars, Pakistan had a deficit of 578 dollars, Sri Lanka had surplus of 158 million dollars, Kenya had a surplus of 88 million dollars, Indonesia 423 dollars, Egypt had a deficit of 500 million dollars, Thailand had a deficit of over 1 billion dollars, Philippines had a deficit of 724 million dollars.

External Capital inflows

External capital inflows have apparently played a significant role in the rapid development of those developing countries which have managed to develop rapidly. Thus while in 1977 India's net inflow was 628 million dollars i.e., about one dollar per capita, Pakistan's net inflow was 580 million dollars (7.93 dollar per capita), Srilanka's 48 million dollars (3.40 per capita), Kenya's 136 million dollars (13.02 per capita), Indonesia 1.4 billion dollars including private investments 235 million dollars (10.47 per capita), Egypt 2.4 billion dollars (62.85 per capita), Thailand 186 million dollars (6.65 per capita), Philippines 740 million dollars (21.42 per capita), South Korea 1.5 billion dollars (43.72 per capita), Tunesia 636 million dollars (123.56 per capita), Peru 880 million dollars (62.92 per capita), Malaysia 237 million dollars (62.15 per capita). It will be seen that foreign capital inflows have indeed played a major role in augmenting domestic savings in a number of developing countries which in turn have developed rapidly. It is worth noting that most of the net capital inflow is from public and publicity guaranteed medium and long term loans and not direct private investment as many people appear to think.

It is also ironical that while India is among the poorest of the poor, its gross international reserves are among the highest. In 1977, India's international reserves amounted to 9.0 months of import coverage whereas the corresponding figure in Pakistan was 2.0 months, Bangladesh 2.2 months, Burma 3.8 months, Srilanka 4.5 months, Kenya 3.9 months, Indonesia 2.7 months, Egypt 1.1 months, Nigeria 3.7 months and USA 1.2 months of import coverage.

Findings

It may appear old, that while we have been singing the praise of our policy of self-reliance, low debt service burden, low foreign capital inflows and high foreign exchange reserves, not to mention the vigorous policies of import substitution, reducing the role of

foreign trade in the process of development of Indian economy and trying to be almost sufficient not just self-reliant, these are precisely the kind of policies which are not being followed by the countries which have managed to develop at a rapid pace and have achieved high rates of growth of per capita income and higher growth of per capita income which are 2, 3, 4 and 10 times those of India and yet these are all developing countries.

This kind of analysis and finding may come as a shock to those of us who have made self-reliance into an almost fanatic credo—self-reliance no matter what that cost; and the cost have been indeed heavy. Despite almost 30 years of following this policy, we have failed to tackle the problem of poverty perhaps more than any other country in the whole world, and ours has been a low growth economy, almost stagnant per capita income and increasing only at 1.3 per cent, as already repeatedly mentioned. There is little reason to believe that if we continue to follow the same policies we shall achieve any different results in the future. It is difficult to visualise that we can tighten our belts even further, and raise our domestic savings rates considerably more, beyond the already high levels of 22 per cent at such a low per capita income levels that we have. Nor it would appear to be feasible to raise resources, or finance investments through larger deficit financing, because that is sure to fuel the fires of inflation even more, and would thus be counter-productive. More inflation, in the last analysis, is taxation of the poor and transfers income from the poor to the rich which is exactly what we do not want to do.

Remedy

If the above diagnosis is correct, then it suggests its own remedy, namely, we should relax the policy of "self-reliance-at-any-cost" i e., at the cost of remaining poorest of the poor, which is the price we have actually paid for this policy. We must turn around our policy, give up our inhabitions and reservations, augment our domestic sayings by large net inflows of resources from abroad, particularly in the form of public and publicity guaranteed medium and long term loans, and use other peoples savings for helping the poor people of India, which really means the poor people of the world because this is where the bulk of the poorest of the poor in the whole world reside. Thanks to OPEC countries, international money markets are flushed with funds and there is a vast amount of petro-dollars deposited with the banks in Europe and America particularly waiting to be borrowed. Last year, i.e., in 1978, international money market financed the new international bank lending of the order of 110 billion dollars and the new international bond lending of another 30 billion dollars; *after eliminating double counting the* total net new bank and bond financing worked out to 140 billion dollars, almost a mind boggling figure and this year, as a result of the recent price increase of oil petrodollars which will be transferred to OPEC countries in 1979 will work out to 185 billion dollars. Thus it is not a question of supply of funds, it is really a question of making up our own minds whether or not we want to go in for borrowings abroad to supplement our own domestic savings resources and thereby increase per capita investment in the country which, along with efficiency of using investment resources, still appears to be the critical factor in determining the pace of development. In the case of India, our per capita investment is very low as already indicated in comparison with other developing countries, and unfortunately the use of investment resources in the country is also not very efficient in so far as we have opted for high capital output ratio investments in the public sector which give a very poor return. Thus on both accounts, viz., the level of investment and the efficiency of investment, we have failed and it is precisely in these two aspects that other developing countries have achieved phenomenal success which of course is reflected the rate of growth in per capita income which they have actually achieved over long periods on a sustained basis. If we are going to accept the policy of augmenting our resources through large net capital inflows from abroad, through public borrowings mainly, then it is also imperative that we will have to modify our policies of "import-substitution with a vengence" and reducing the role of foreign trade in the economy. We would have to reorient our thinking and give a much higher priority to increasing our exports, including production for export and allowing foreign trade benefits to come to the country in a big way. This would also necessitate modifying our policy of "import substitution at-any-cost", rather we would have to export more and import more and in the process reduce the debt service burden (as a percentage of our exports), despite increased capital inflows from abroad through massive borrowings in the international money market.

"... of late, the economic upheavals which many states have been going through, have increased in intensity, and they are increasingly affecting the peoples' material situation. Statesmen and economists are racking their brains over the causes behind all this. But the conclusion that is borne out every day and every hour is beyond question : the aggravation of economic problems is largely connected with the rising scale of the arms race and with soaring military expenditure."

—Mr. A. A. Gromyko,
Soviet Foreign Minister in
the UN General Assembly

Collective Self-reliance

The inescapable conclusion which emerges from taking a look at the performance of Indian economy in the World Perspective is that we would have to reverse our policy of "self-reliance-at-any-cost". We would have to turn our attitudes around, be more export-oriented rather than import substituting, stop being economically isolationist and inward looking, go in for borrowings abroad, recycle Petro-dollars to India and use other people's savings to augment our own savings and put them to work for helping the poor in this country. Otherwise, our future performance is not likely to be better than our past performance which, despite the great sacrifices made by the people of India has meant more or less a stagnant economy or at best a low growth profile which we have achieved up till now.

Instead of self-reliance we would have to adopt a policy of "Collective Self-reliance" which means that instead of trying to become self-sufficient, we recognise that this is an interdependent world and there are gains to be had from foreign trade and mutual interdependence. In this context, we would have to work at various levels of International Economic cooperation—at the regional level between India and the neighbouring countries to bring about EEC type of economic community between India, Pakistan, Afghanistan, Nepal, Bhutan, Bangladesh, Sri Lanka and Maldive Islands and perhaps also Burma and Iran; an inter-regional level between the countries of South Asia and other regions like South East Asia (Asean countries) i.e. Indonesia, Singapore, Malaysia, Thailand, Phillippines, perhaps also with other countries in the region such as Vietnam and Korea; between South Asia and West Asia and perhaps with also other regions such as North Africa, West Africa, East and South Africa, Latin America and the Caribbean regions; and of course between us and the developed countries such as Japan, North America, Europe, Soviet Union and its allies, and at some stage between India and China as well. Thus we have to turn ourselves around from an inward looking, self-reliance seeking, country to outward looking country, pursue the policy of collective self-reliance and mutually beneficial interdependence. Without an almost 180 degree about-turn in our policy, there appears to be little hope for solving the problem of poverty in India.

It is worth noting that most other countries including the centrally planned economics such as Soviet Union, East European countries and, most recently, the People's Republic of China have already recognised this, are opening up their economics, are developing economic cooperation with other countries, borrowing massively in the international money market (Peoples Republic of China has last year borrowed Billions of Dollars, and so has Soviet Union, Poland, Romania, and other east-European countries), and getting technology and capital from abroad in a big way, thereby modernizing and accelerating the growth of their economies. Our is a much greater need than theirs, since our poverty and suffering is much more.

International liquidity—SDRs Aid (Contd. from Page 43)

Price for Acceptance of Creation

In this connection, I would like to make the following suggestions for consideration by the developing countries as the price they should demand for accepting the creation of a Substitution Account in the Fund :

1. Establishment of a link between the S.D.Rs which have been already issued or under issue and development assistance, by asking the industrialised countries that have made no net use of their S.D.Rs to surrender equivalent value of their acceptable foreign exchange reserve assets to the Fund, against which the Fund should issue fresh S.D.Rs to the developing countries. If necessary this could be made a part of the Substitution Account, where the imputed deposits of the developing countries would be the foreign exchange surrendered by the industrialised countries against the S.D R. issues alloted to them earlier and the developing countries would have S D.Rs alloted to them under the Substitution Account against these deposits.
2. A firm assurance, that should have statutory sanction, that there will be a defined proportion between the S.D.Rs created by the Substitution Account and those created by the Special Drawing Rights Department, so that a significant proportion of all S.D.Rs will always bear the characteristics of the original S.D.Rs. of not needing either prior surrender of real resources or subsequent repayment in real resources by the recipient countries.
3. A change in the system of allocation of S.D.Rs. other than those created by the Substitution. Account such that the developing countries would receive a larger proportion of these S.D.Rs than they would receive on the basis of their share in Fund quotas. The extent of this increased proportion and its distribution among the developing countries could be a matter for negotiation.

If the developing countries accept these suggestions and fight hard for their acceptance by the developed countries, it may be possible for the world to have a new international monetary system that would serve the interest of both the developing and the developed countries, make S D.Rs. the principal international reserve asset, promote the transfer of real resources to the developing world by establishing a link between S.D.R. and development assistance, and help to promote economic growth and development in the developing world, and economic stability in the developed world. It is only when the international monetary system serves the interests of both the developing and the developed world that it can endure and contribute to global development and welfare; and this cannot be done except by carrying out the reform suggested above or measures on similar lines, that would make the I.M F. a direct participant in the net flow of real resources to the developing world on a long term basis, which is the same thing as establishing an S.D.R-Aid Link. □

21 DPD/79—10

The Third General Conference of the United Nations Industrial Development Organisation (UNIDO-III) is being held in New Delhi from January 20 to February 8, 1980. What is UNIDO, what is its relationship with UN, Ind a's role in UNIDO, the benefits India and other developing countries get front UNIDO etc. are discussed in this article by the author.

India's Role in UNIDO

M. A. Rangaswamy

THE UNITED NATIONS Industrial Development Organisation (UNIDO) came into being in January 1967 as a result of a resolution adopted by the United Nations General Assembly two months earlier.

Since the establishment of UNIDO its main functions have been to accelerate the industrial advancement of third world countries. Assistance has been provided in the development and sterngthening of industrial enterprises and institutional infrastructures, training personnel in relevant technical and managerial skills, initiating the operation of factories, launching pilot or demonstration plants, promoting domestic and outside investments, provision of technical advisory services, strengthening the bargaining position for negotiation of technology transfer agreements, developing technologies for alternative sources of energy and so on. These programmes have entailed assignment of experts, supply of equipment and contracts for consultancy work, fellowships and training and other miscellaneous functions. In the first 10 years some 10,000 projects had been taken up. In 1978 the field activities involved a total of 2154 projects of which 337 were large scale (each over US $ 150,000), 412 medium size ($ 50,000 to $ 150,000), 371 small scale ($ 25,000 to $ 50,000) and 1034 projects averaging less than $ 25,000. A substantial increase had been achieved in 1978 over the previous years and it is stated that the outlook is even more promising for 1979.

Special programmes are being devised to meet the desperate need of less developed of the developing countries, especially those having additional advantages, being either land-locked or surrounded by large expanse of ocean. UNIDO has also a special industrial services programme, which is a way of by-passing the rigid rules in an emergency. An example of one such scheme is rehabilitation of devastated industrial plan's in Romania.

Expenses for the administrative and research activities of UNIDO—approximately US $ 20,000,000 a year—are borne by the regular budget of the U.N. Technical Assistance activities are financed mainly by the United Nations Development Programme (UNDP) under its allocations to assist national development programmes. The total value of projects undertaken during the first nine years many of which will take years to complete was over US $ 250,000,000. UNDP also earmarks US $ 3,500,000 annually for the special industrial services programme. Out of this allocation, US $ 1,000,000 is expected to be used on behalf of the least developed countries. A General Trust Fund of voluntary contributions has also been established. This is built up by annual Pledging Conferences which have produced a total of US $ 21,000,000 from 1968 to 1976, enabling the UNIDO to undertake special projects. A UN Industrial Development Fund has also been established recently. Other sums are also placed in trust with U. N. by Governments for the work undertaken in their country.

M.A. Rangaswamy is Secretary, UNIDO Conference, Department of Industrial Development, Government of India

For the operational activities of the UNIDO, India has been making voluntary contributions since 1968. The total contributions made from 1968 to 1976 was about US $ 500,000. These contributions were made in rupees for financing technical assistance projects that are not eligible for aid under regular UNIDO programmes. More recently India has by way of voluntary contributions pledged a sum of US $ 1,000,000 (US $ 200,000 in non-convertible currency and the balance of US $ 800,000 in foreign exchange) in each of the pledging Conference of the United Nations Industrial Development Fund of UNIDO held in 1978 and 1979. In view of the advanced level of development in India and its interest in international efforts for accelerating industrialisation, facilitating transfer of technology and improving access for exports of manufactures and semi-manufactures, India has taken particularly keen interest in the expansion of U.N. activities in the field of industrialisation. The contribution of general purpose funds by India would particularly assist UNIDO to meet the requirements of the smaller and less developed countries.

UNIDO an-executing agency

UNIDO is a major executing agency for the United Nations Development Programme (UNDP). In the period April 1979 to Marih 1983, plans for assistance to India from UNDP are proposed to be of the order of US $ 150,000,000. There are some 64 on-going projects, 18 in the pipeline pending approval and another 72 proposed to be taken up. The projects cover a wide range of areas, and in some of them the UNDP input is over US $ 5,000,000. Some of the more important projects are the sponge iron project, the solar energy proto type and product development centre at the Bharat Heavy Electricals Ltd., the Fatigue Laboratory for Atuomotive industry in Maharashtra and the Advanced level tale-communication training centre at Gaziabad. Particular mention may also be made of

projects to assist the small scale and handicraft sectors such as prototype development for survey instruments and medical apparatus and test room and finishing centres for handicrafts. Though some of the institutions included in the Indian Programme are designed mainly to subserve national purposes, they have been making their facilities available to other developing countries This has been in line with India's policy of sharing its expertise and skills with others.

Coming now to general conferences of the UNIDO, the first Conference called the Special International Conference of UNIDO, was held in June 1971 in Vienna. It adopted a resolution of consensus on the long range strategy, structure and financing of UNIDO. In 1974, a new orientation was given to the preparatory work for the next Conference and indeed to the Conference itself, following the adoption by the General Assembly of the U.N. of a Declaration and programme of action on the establishment of a New International Economic Order. The Second General Conference of UNIDO was held in Lima in 1975. For UNIDO, a milestone was reached at this Conference. Here, although total unanimity was not achieved, the stand-points of various groups of countries were brought closer and a sense of International dependence demonstrated with the adoption of the Lima Declaration and Plan of Action on Industrial Development and Cooperation. This Declaration laid down the target that the share of the developing countries in the world Industrial production should reach 25 per cent by 2000 A.D. The Conference also recommended that such General Conferences be held every four years. The Conference also recommended that UNIDO be converted into a specialised agency in order that it may intensify and expand its activities in the manner recommended by the Lima Declaration and Plan of Action.

India's Role

The recommendation that UNIDO be converted into a specialised agency was followed up and after various meetings the way has been cleared for UNIDO to become the 16th specialised agency of the United Nations. India has been playing a leading role in this effort. The constitution will come into force when atleast 80 States have deposited the instruments of ratification, acceptance, or approval. India signed the constitution on 19th November 1979. It is expected that very shortly UNIDO will become a specialised agency of the United Nations. This would give it greater autonomy in its activiites.

The Third General Conference of UNIDO will be one of the major United Nations conferences in the 1980s. It will in fact be meeting at a crucial stage of world economic development just a few months before the special session of the U.N. General Assembly to discuss and adopt the new international development strategy for the third United Nations Development Decade. It will undertake a review and appraisal of the world industrial situation, with specific reference to industrialisation as an essential element of the development process in the 1980s and beyond. The Conference will focus attention on industrial cooperation among developing countries and to improve mechnisms for industrial cooperation to promote the flow of integrated technical and financial assistance to developing countries, including regional cooperation and special measures for the least developed, land-locked and island countries. The Conference will also review the effectiveness of institutional arrangements for UNIDO with reference to the long range strategy for the organisation to meet the challenges of industrialisation in the 1980s and beyond.

At Lima a bold and forthright call had been given for a major shift in the structure of the world economic production within a given time span, in order that the vast majority of the poor living in the developing world could have a just and fair share in the economic assets available on the international scene. The Lima declaration also stresses the qualitative aspects of industrialisation such as greater social justice and optimum development and utilisation of human resources, including women. Recent studies have revealed that during the 60s, the developing countries' share of manufacturing value-added remained stable at about seven per cent rising to 8.6 per cent in 1975. It has been calculated that with a growth rate of approximately five per cent during the period 1975—2000 A.D., for the developed countries the manufacturing value-added growth rate required in the developing countries to achieve the target set in the Lima declaration would be of the order of 10 to 11 per cent over the next 25 years. Another intersting calculation is that the total investment in industry during the period 1980 to 2000 A.D. would have to amount approximately 2000 billion dollars in order to attain the Lima target, and the flow of foreign resources approximately 15 to 25 billion dollars per annum more than the present level of eight billion dollars. These figures have been cited only to indicate the tremendous efforts that would have to be made if the targets are to be achieved, particularly at a time when there is a global fear of recession, world wide inflation and an acute scarcity of energy resources.

Achieving the Lima Target

At the UNIDO-III, in terms of priorities, therefore, clearly the most important is the evolving of a consensus on the steps that would take the world towards achieving the Lima target and beyond. It would be necessary now to think of disaggregation of the global targets set at Lima in terms of its regional and sectoral dimensions. The mechanisms to be set up to enable the least developed and other such countries to work out their industrial potentials to the maximum possible advantage would have to be spelt now. The inputs of international financial and technical flows would have to be mobilised. The rapid redeployment of industrial capacity from the developed to the developing countries involving a rational and efficient structural change in international production and trade would have to be accepted.

The Secretariat of the UNIDO has prepared some excellent studies and has made various proposals for consideration at the Conference. These proposals would have far-reaching repercussions and they would attract considerable attention in the discussions in UNIDO-III. The crux of the problem is really to ensure the additionality of transfer of resources from the developed to the developing world and the latter assured of a fair share of scarce resources in order that the whole world economy receives a new impetus and a new push towards growth.

Several meetings—Regional, group-wise and also a special meeting of the Industrial Development Board

(contd. on page 93)

Information Plus Communication in NIEO

N. Seshagiri

WHEN MUSTAPHA MASMOUDI, Tunisia's permanent delegate to UNESCO and a member of the International Commission for the Study of Communication Problems, presented his historic case for a new world information order, he unleashed a chain-reaction of events that led to a greater awareness in developing countries for the need to organise pressure groups for safeguarding their collective interest in the vital field of information. Masmoudi highlighted a flagrant imbalance in the sharing of information resources between the developed and the developing countries, the former exercising a hegemonic domination of the media through financial, industrial, cultural and technological superiority relegating the developing countries to the status of mere consumers of information sold to them as a commodity like any other Most channels of international information flow are controlled by transnational agencies of developed countries. there is a spurt of counter-balancing information and economic domination. This observation makes a case for a generalization into what we may call as 'The Law of Conservation of domination' of developed countries over developing countries.

The coming of the computer age has added a new dimension to the precepts so far expounded for the creation of the New World Information Order. Informatics, which is dependent on computer technology, goes a step further encompassing the fields of information science, computer technology, computer software, data communication, systems analysis, operations research and optimization among others. The foundation on which the New Information Order is being built, is found to be inadequate to take on Informatics in all its ramification. Only the information part of Informatics is taken careof. The rest of Informatics poses different problems and calls for different solution from what the information order can cater

Information about our natural resources wheat crop during a particular year is in the hands of some of the developed countries before we ourselves know about it. The onset of computer age added a new dimension to the New World Information Order. With this background as a member of the UNESCO Advisory Group on informatics, the author lucidly presents the growing imbalances in the sharing of information between the developed countries and developing countries, and suggests a set of safe-guards for potecting the interests of the latter in informat cs, which includes both software and hardware.

Unlike Disraeli's imperialism, information imperialism is very subtle, indirect and pervasive. As information is a powerful means by which the minds of people at large is conditioned, it is used almost as a supplementary weapon by the super powers to maintain their social, cultural and economic influence over the rest of the world. Information can be regarded as the non-material projection of the colonial era into a world of independent countries. Independence, however, is an elusive concept and the stranglehold of imposed information on certain countries compares favourable with the earlier colonial domination. With the decay of political domination around the globe, to. In view of this, the author proposed as a member of the UNESCO Advisory Group on Informatics as well as through the forum of Informatique Pour Les Tiers Mondes (ITM) *the establishment of a* New World Information Order.

The Growing Imbalance

The growing imbalance between developing and developed countries is perhaps most pronounced in the field of informatics. If necessary correctives are not provided within the next decade, it is estimated

that the developing countries stand the chance of losing their due place for ever in the mainstream of the second industrial revolution. It is the realization of the over-powering importance of informatics though the developed countries through their commercial interests, show a long term planned approach to preserve their domination in this field. The following 14 types of imbalances are proof enough for this.

The hardware grip.—The hardware behind Informatics perhaps represents one of the most sophisticated technologies. In the computer, the Central Processing Unit is based on the technology of very large scale integrated circuits (VLSIs) and the peripherals depend on high precision electro-mechanical magnetic and optical technologies These are monopolised by less than half a dozen countries in the world. When countries like India attempt to get into this field, they have to face stiff resistance from entrenched commercial interests backed up by political vested interest The pace of progress in the hardware technologies is so fast that developing countries are at an intrinsic disadvantage in trying to cope with the pace This intrinsic disadvantage is fully cashed in by the developed countries

The software imperialism.—The development of Information software including computer software is manpower intensive. Yet, the developed countries tend to block the free use of software especially because, software accounts for more than half the total cost of a computer or in general of Informatics systems. Software, including specialised program packages which are primarily prepared for the types of applications and conditions prevailing in developed countries are forced into adoption in developing countries even if there is a mismatch between software supply and the demand The software is transferred almost invariably in the form of binary tapes, discs etc which often defy decoding Even if one can, one is prevented from doing so on the basis of purchase contracts. This has resulted in a software imperialism where developing countries have to change their organizational structures in order to suit the structure of the software supply.

The firmware dominos.—When computer manufacturers in developed countries discovered that software is becoming costlier than hardware, and many users started developing their own software or purchase unbundled software, they tried to preserve their monopolistic position by inventing the firmware which is software fused into the hardware Recently, firmware has reached a higher level sophistication becoming "pellets" into which scores of computer programs are built in fusing them into hard-wired circuits within very large scale integrated circuits This has carried the software imperialism into a situation where less than a dozen corporations becoming firmware dominos

The linguistic chauvanism : Informatics system manufacturers defy any attempt at standardization of computer languages as well as modularisation and portability. Most of the computers are developed in English though if you buy a Russian or French computer, you have to learn Russian or French to operate at the lower level languages. The higher level languages like *Portran* and *Cobol* are invariably in English or English like words. With the onrushing data base society, the output from the computer is directly despatched to the end users of information. This brings in the need to overcome the existing linguistic chauvanism in a Informatics and promote the use of regional languages in computers. This was amply brought out by an Electronics Commission (IPAG) sponsored Seminar on this topic.

The channel hogging.—In the absence of an effective regulation, an intentionally promoted disorder and a lack of coordination exists in telecommunications and in the use of satellites. The technologically more powerful country comes ahead and puts up satellites in whatever orbit that is convenient to them economically and utilitywise. If a developing country goes later, it is relegated to the position of having to put satellites in an inconvenient orbit often at a much higher cost There is a pronounced inequality between countries in the distribution of radio frequencies also. It is well known that nearly 90 percent of the sources of the Radio Frequency spectrum is hogged by a few developed countries. The power density per square kilometer is several times less in the developing countries than in the developed countries. A clear example of channel hogging is apparent from a recently conducted experiment called, RECON experiment. In this experiment, bibliographic data base from Frescati in Italy was to be made available at Bombay through satellite data communication. Because of the high cost of the communication channel for such purposes, the cost per quenry and ratrieval turned out to be between $ 30 and 70 depending upon the way a query is structured. On the other hand, similar services between Frescati and other European countries would cost only a fraction of this. The RECON experiment was considered a technical success but was pronounced beyond the capacity of the developing countries.

The omnipresence strategy.—The technology of informatics is undergoing a revolution currently with the shifting of strategies of some of the dominos in the field like IBM. For example, three companies, IBM, COMSAT GENERAL and AETNA have joined together to form a new venture called, Satellite Business Systems (SBS) During the next decade, more than 1000 million dollars of investment is expected to go into this venture. The plan is to have eventually a worldwide network of satellites which is able to communicate with any part of the globs These eatellite networks will be connected with a few strategically placed giant computers around the world controlled by SBS The long term objectives of the networks like SBS appears to be a worldwide satellite network catering to both analog and digital communication, purchase of taped information on bibliography, statistics, descriptive information and the like, continuously store new information in a retrievable form, centralised information reservoirs at a few points on the globe and give informatic sevices of all forms to whosoever in whichever country All a user in any place over the globe has to do is to instal a very low cost compatible computer terminal of whatever make. The networks like SBS would only instal a groundbased repeater station in each city to service the Informatics needs of the users. What is more, the transmission capacity plan is estimated to be so large that within a reasonable cost, any program fed in by the user along with their data, can be processed at a remote centralised location via the satellite system and the output promptly beamed back to the user. Such network will operate

like the Big Brother of Orwell's prophetic Novel "1984". Indeed the concept of the Big Brother is only a technological integration of all the sales practices of multi-national computer corporations to-date hiring data processing centres, manufacture, self-maintenance, hundred percent control over the systems, hundred percent equity and now added to this, a control over the information of everybody else. In such an omnipresence strategy of international computer networks, the developing countries are very much on the receiving side, the handicap being far too much against them.

An Assymetric exploit.—Many of the dealings of informatics corporations with developing countries have a built-in a commercial assymetry which favours the developed countries and goes against the developing countries. For example, the so called, ICBP (Inter-Company Billing Price) is so structured as to make imports of informatics products costlier and export of software and services cheaper. The Government of India had investigated this practice and came out with the conclusion that ICBP is highly discriminatory. There are many such assymetric factors in the transaction between informatics product manufactures and users in developing countries.

The first-comer psychosis.—In the field of computers, the first-comer of a new product has the intrinsic advantage over others and can jocky itself into a position of monopoly of certain special services through secrecy of know-how afforded by hardware and software means. As the first-comers are all in developed countries, the developing countries are at a disadvantage with respect to much of the technology. In view of this, it is an irony that the same product is purchased by the user in a developed country for much less than what a user in a developing country pays.

Cumulative dependence.—Perhaps Informatics industry is unique in the sense that there are built-in technological means for indoctrination and perpetual cumulative irreversible dependence on the first seller of a product. An organisation may let a foreign company to instal a computer, to provide all the required services for it to maintain the system and to take care of computerisation in the best possible manner by 'spoon-feeding'. The foreign company will then develop all the software, carry out all the systems analysis studies and even tell the user what kind of application he can go in for. As computerisation by each company has a distinct culture, an organisation opting for a particular culture initially, will find it very difficult to shift mid-course to another without incurring heavy expenditure and retraining of the manpower. For example, they would have prepared a number of programs to suit a small computer which is part of a family of computers. When the load builds up, if the organisation desires to instal a large computer, it will find it convenient to do so by replacing the earlier one with a bigger one in the same family of systems. This requirement called the 'compatibility' necessitates and abets an irreversible process in computerization which compels a user to tie up with the same manufacturers as long as they can help it. This gives the foreign manufacturer a cumulative stranglehold power over the user.

The transparent sky.—As a number of satellites belonging to the developed countries are up in the sky hovering or orbiting above, every country has become transparent to snooping. For example, remote sensing of natural resources of different countries is being routinely carried out by many developed countries using their satellites. Experiments like "LACIE' (Large Area Crop Inventory Experiment) map even the wheat and rice crops all over the globe. In other words, information about our natural resources or our wheat crop during a particular year is in the hands of some of the developed countries before we ourselves know about it. This can give an a-priori information advantage which can in principle be used for commercial and political advantage. Informatics plays a very dominant role in this process, As all the information that is collected is transmitted by a small computer to a distant giant computer situated in the developed country to which the satellite belongs.

Project percolation.—By virtue of their superior technological base in Informatics, the developing countries are forced into a state of having to accept percolation of hardware, software and services into their national projects which deal with the processing of information. For example, in the recent MONEX experiment, even though considerable care was taken to get as much data on monsoon as possible, the question turned out to be who possesses superior informatics facilities in order to analyse the data. If the same data on monsoon flows to India, as well as a developed country, it is the latter who will derive more knowledge about monsoon in view of the superior processing software and processing facilities they have.

The data bank infiltration.—With the operation of a large number of international information systems and data banks like AGRIS for Agriculture, INIS for Nuclear, MEDLAR and MEDALINE for Medical among others, developing countries find themselves in a position of having to link up with such systems. Usually in some cases, the participation calls for mutual exchange of information. Some of the smaller developing countries even let the specialists from developed countries develop their data banks, even though they are conscious of long term disadvantages of the same. This is a case of helplessness in the face of a growing imbalance.

The Informatics Consumeris.—A pronounced trend of consumerism exists in the field of Informatics. Already artificially whipped up consumerism is apparent in the purchase made by many developing countries. Usually, overselling is managed through consultants and specialists whom the developing countries employ for assisting the creation of their data banks, optimization of their natural resources, planning of their national economies etc.

And many many more.—The spectrum of the growing imbalance between developed countries and developing countries in the field of informatics is so large that the bargaining position of the developing countries in this field is going down monotonically. The author has made a detailed analysis in which as many as 40 factors of imbalances like the above, have been detected of which the above fourteen are the more important ones.

In order to see that the developing countries develop their own informatics base under conditions of equality with developed countries, a number of safeguards have to be implemented within the ambit of a well planned world Informatics Order. Some of these safeguards are :

1. *TCDC drive.*—Hardware development is best carried out by developing countries in a cooperative manner through a scheme of technology cooperation among developing countries (TCDC) within the ambit of the Group of 77 Programmes as well as through TCDC assistance by UN organisations, as investments in Informatics technology is quite high especially for sustaining a dynanic R and D base.

2. *Software transparency.*—Developing countries should collectively bargain for transparency of software products to the maximum extent possible.

3. *Participatory firmware development.*—As firmware is four to seven times as manpower-intensive as software which itself is highly manpower-intensive, the developing countries should colletively bargain for taking up as much of the firmware development as possible.

4. *Multi-lingual dissemination.*—Informatics products should contain features for easy incorporation preferably through software of local languages so that d'ssemination could be in the local script and language.

5. *Appropriate legal structure*—The International legal structure governing the hardware and software and firmware in the Informations flod should recognise the presence of imbalances between developed and developing countries and consciously provide legal safeguards to offset the same

6. *Cost preference channels.*—The tariffs for satellite communication and other modes of international communication between developing countries and developed countries for informatics should be kept at the same level as has been allowed for international press communication. This would make experiments like RECON more cost-effective, making it viable for developing countries to access international data bases situated around the globe.

7. *Code of Conduct.*—To safeguard against the omnipreserve strategy of international networks a code of conduct should be carefully evolved which protects the interests of developing countries.

8. *International watchdogs.*—Under the aegis of United Nations, an organization mechanism has to be evolved which monitors the technology and trade transactions between developed and developing countries (both import and export) such that the lower bargaining position of developing countries are not exploited through built-in assymetrics like ICBP.

9. *Temporal independence.*—Developing counries should insist upon more standardization, modularization and portability of informatics products so that they do not get into cumulative irreversible dependence on the same manufactures.

10. *Planned Self-help.*—In an effort to minimise percolation into projects, infiltration into data banks and data snooping, developing countries should launch a massive indigenisation drive especially in software and services. Where possible, complementary efforts could be made through TCDC. Projects like Monex should be processed internationally under the aegis of large computer installations of UN organizations and the results disseminated without constraints.

11. *Appropriate Informatics.*—The growing consumerism in Informatics can be countered by evolving a coordinated plan of appropriate informatics through a cooperative effort of developing countries.

12. *Will to equality.*—Above all, the developing countries should have a will to grow into a position of equality with developed countries. Such a will should necessarily be organised through a forum. The expression of this collective will can be facilitated by launching a New World Informatics Order.

The New Structure

The basic objective of the new structure is to remove the growing imbalances and organise forum for implementing the safeguards. The aims of developing countries and developed countries can be worked out in such a manner as to minimise conflicting factors and promoting mutual understanding. □

India's Foreign Trade *Contd. from Page 49*

including close interrelationship between trade flows and flows of money and finance. The rules and principles governing these two sets of flows would be made mtuually supportive and directed to the same basic objective. To ensure that these general purposes are attained, international action is needed on both their short-term and long-term aspects ensuring that the short-term national policies promote, and do not obstruct, the movement towards longer-term restructuring of the international economy.

In conclusion, it can be said that making the programme of NIEO into a reality is a task of enormous magnitude and calls for the most resolute and dedicated efforts on the part of the international community as a whole. It has been demonstrated so far, how difficult it is for the developed countries, who have benefitted from the existing order, to visualise its basic transformation. This challenge calls for an unprecedented bold political will on the part of all the world nations. India, as a developing country should welcome the NIEO programme and should utilise every opportunity to work for its successful implementation. The ideas on the establishment of the NIEO particularly in the areas of trade and finance should be considered meticulously and incorporated in the formulation of its strategies relating to trade and development from time to time, both at domestic and international level. Deriving some satisfaction from the gains achieved at the UNCTAD V, India should continue its efforts in emulating further and maintaining the solidarity of the developing countries by making specific contributions regulating to the various aspects of the NIEO programme. □

Silver Streaks on a Grey Horizon

Amar Nath Dutta

MORE THAN it meets the eye, the International Trade Fair which recently concluded and the National Trade Fair now being held as a part of UNIDO Conference in New Delhi is of momentous significance as the Capital goes merry with all its festivities and revelries. To many a mind, searching inquiries as to its prospects would appear for a number of times and it won't be surprising if all of them cannot be answered just in a huff for the prospects are manifold and often diverse.

One immediate gain that will accrue to the host country is the close contact between the trading fraternity on the international plane and the multiple segements of our economy participating in the Fair. This will obviously give an idea as to the taste variations of partners in a give and take transaction and also afford an opportunity to acquaint them with the typicality of products, processes, designs and markets while making them cost and quality conscious all the way This in its turn will enable the partners to explore areas and locations in the yet unexplored export structure in a bid to maximise the export potential of the country. In fact, our President while emphasizing the importance of continuing export promotion measures has underlined the need to make our merchandise exports competitive in terms of quality, price and delivery schedules and indicated several healthy trends in our export pattern largly stemming from a diversified, strengthened and sophisticated industrial base. This has now become a distinctive feature with the decentralied sector of our economy gaining a strong foothold in our exprt matrix, the result of a "diversification of efforts over a wide spectrum of economic activity" The emerging vista appears still more brighter because of the increased potentiality of agricultural export which according to a recent estimate is rated at Rs. 3,125 crores by the end of the Sixth Plan compared to Rs. 1,849 crores as at present.

Considerable scope exists for Indian goods to venture new El Dorados in the South Asian markets. To achieve this, the author says, increased assistance and timely help are a must criterion.

Non-technical Approach to Exports

Despite continuing efforts in the past, a systematic growth pattern of exports could not be worked out because of a number of factors, most important being a non-technical approach to the whole gamut of export operations. May be it was a chance factor or an expediency answering to the exigencies of the exigencies of the situation that exports were viewed as a follow-up of an inward orientation strategy where the approach to developmental planning basically hinged on the exports-first principle and not an integral part of the national economic growth. Exports were primarily treated as a surplus over current production and wherever domestic product slided to a low level, say in a recession or a crop failure, exports surged. Another drawback was the missing element of a demand calculus at the international level so that whenever exports had to be pushed, this had to be done by heavily subsidising them at a higher economic cost Consequently, a severe disparity with the local costs soon emerged and the shortsightedness of this approach made itself particularly evident with the net accrual of benefit undergoing a worse trade-off with every decline in the unit value of our products in the international market. Similarly, the way in which import-substitution strategy was being implemented made the foreign trade play a complementary and not a fundamental role. The basic idea was to maximise the local value added Yet, rightly understood and implemented, the two could well supplement and reinforce each other to make the total impact quite considerable

Despite all this, the country stands well placed and what is more, engineering goods hold the most promising prospects for a cognizable export expansion outside into the world market. Such goods already enjoy a high degree of export elasticity that keeps the world demand significantly buoyant with increases in world income A recent finding testifies to it and adds that the world consumption of engineering goods grows at more than one and a half times the rate of per capita income growth. In the given context, however, the competitive advantage will significantly depend on the cost structure. The industry at home already enjoys an integrated production base which enables it to take advantage of the various technological linkages permissible and to the extent feasible. The major inputs are domestically available. Specialisation along labour and skill-intensive product lines will promise yet another bonanza and although India is a

Dr Amar Nath Dutta is Industrial Economist, Calcutta

marginal exporter in the world market, it can reap some advantage out of 'marginality' by diversifying commodity structures, 'invisible items' and the technology factor to innovate product designs, study specific cost behaviour and administer a stricter quality control and a time bound delivery schedule.

To make a veritable thrust into the world market, the country will mount a burgeoning drive. In this process, we will have to meet challenges and problems. They are indeed welcome because they provide opportunities to streamline our production and export pattern.

Protectionism

But the future remains anybody's guess. With a substantial drift in the world economy against the urgency of redressing the imbalance between inflation and unemployment, the financial and trade policies of industrialised nations gave a sever torque to the trade potentialities that the developing countries over the decades were trying desperately to build up as an integral part of their development programme. An overview on the costs of protectionism as worked out by the GATT secretariat in 1977 indicates that protectionist measures resorted to by the developed countries in the previous two years culminated in restrictions to the tune of 3 to 5 per cent amounting to $ 30 to $ 50 billion a year. Even then, considerable scope exists for Indian goods to venture new El Dorados in the South Asian markets And to achieve this, increased assistance and timely help are a must criterion but the hometruth needs be retold in the same breath—providing export subsidy—whether in engineering items or in any other export article should not be related to a specific strategy with a detailing of the cost benefit estimates thereof

Perceptibly therefore much will depend on whether the country is able to quantify its capabilities in terms of quality production, cost reduction and a tight delivery schedule of the myriad merchandise items, catering to the specific demand overseas well in sufficient measure What merits consideration is the allied aspects of foreign collaboration, sub-contracting and joint ventures. Empirically, the West and Japan have already put in significantly greater reliance on developing countries for supplying intermediate and labour intensive technology over a wide range of systems. India is most favourably placed with the latter's offer for sub-contracting and joint ventures in vulnerable areas of South East Asia and Europe, but with competition from other countries growing intense, export markets have to be tapped with a continuous drive and located in particular products and services with all seriousness to maintain them over a comfortably longger period than a mere guess

Viewed against the deliberate shifts in demand on the part of some of the developed countries, a growing impasse with increased quantitative restrictions and the insistence of some of the organised groups like the E.E.C. against the watering down of restrictive clauses as have been urged by the GATT, a few alternatives can be suggested here. As the latest report of the GATT reveals, food items constitute a major factor growing in trade dimensions as between developed countries themselves and India with her select bumper crops can make a successful inroad into the existing monopoly of the group of industrialised countries in this regard. The additional factor to be considered relates to a prior assessment of the specific demand pattern vis-a-vis ensuring a steady supply function of such items in the demand-supply matrix and, for this, new operational measures have to be made effective to balance output with a fairly rationalised cost-price structure at home.

The second innovation should relate to causing deliberate structural shifts in the export sectors of our country in response to growing protectionism and subsequent developments like China's growing export potentials and its recent impact on the international market. It has been indicated that apart from sensitive items like engineering goods and textiles, the competition envisaged will relate to other vulnerable items like rice and crude oil and if the the EEC secretarial reports are any guide to the eventualities, the Chinese claims are comfortably rated at a three-times multiple of their present quota of 12,000 tonnes of garments to the EEC in the current year.

Joint Ventures

Joint ventures and consultancy services cover yet another field where considerable scope exists for tapping the market, both developed and underdeveloped. Every effort has to be taken to ensure that fluctuations in overseas demand do not become a non-issue. Again, quite a number of cases have come to light where Indian ventures abroad have run rough weather because of liquidity hazards. Part of our dependable foreign exchange reserves can be profitably used to enliven the cash-flow position of the faltering joint enterprises It is totally useless to rush in for help when they are going footloose on the brink of a disaster For this reason, consistent policies have to be drawn up covering various aspects of merchandise exports, collaboration and joint venture deals with an element of flexibility in the overall context of development which the Alexander Committee indicated in its report

Admittedly, problems are there and will remain as India—the tenth ranking in the order of development it is placed on—will mount a burgeoning drive to make a veritable thrust into the world market. And such problems are indeed welcome because these are also challenges mixed with opportunities to streamline our production and export pattern geared to consequential shifts in the sophisticated demand structure of the foreign countries. But the seamy side of the export trade should not deter us at all in taking the necessary steps to refurbish the image of our country as one of the leading exporters of the Orient. Deliberate planning of the export sector is a must to rear the potentials of growth and allow an in-built flexibility to develop within. A continuing search should be on to size up the output capacity in relation to demand and a series of cost-benefit accruals should be worked out on the trade matrix. A rational cost based formulation should always be the motivating force to shape our production structure in terms of international indicators so that performance is matched in all finesse with the growing competitiveness of the products traded in world markets. We can do it and with all our expertise cannot just allow opportunities slip through when the question now is to be or not to be. □

International Development Strategy

K. K. Bhargava

ECONOMIC COOPERATION among developing countries is going to be perhaps the most crucial element for the new International Development Strategy (IDS) which the international community is currently trying to formulate for the Third Development Decade. Over a period of time, the consciousness has dawned upon the developing countries that the strategy of forging collective self-reliance among them has the dual characteristics of being both an essential part of as well as an instrument for the necessary structural changes required for a balanced and equitable process of world economic development, ushering in a new set of relationships based on mutual interests and accommodations. They therefore, view the new IDS as an integral part of the continuing efforts of the international community to accelerate the development of the developing countries and to establish the New International Economic Order (NIEO). Of late, there has been growing realisation that such a strategy embodies the potential of joint action by developing countries that will strengthen their capacities to negotiate with developed countries and reduce their dependency on them. Finally, the international community itself has recently emphasised that the new IDS should contribute to the promotion of the objective of national and collective self-reliance of the developing countries, specially through the promotion and support of economic and technical cooperation amongst themselves.

Historically, it could be asserted that political independence has not been accompanied by the requisite degree of autonomy in economic decision making in developing countries due to prevalent under-development of their economies and their continued external vulnerability. The developing countries have, therefore, been putting across a united front, in their negotiations with the developed countries on international economic matters and at the same time working out programmes of economic cooperation among themselves In the second half of the present decade, they have made several crucial efforts to foster economic cooperation among themselves in the context of NIEO. The most important among these have been the elaboration of the Action Programme of Economic Cooperation among Developing Countries decided upon at the 5th Non-aligned Summit in Colombo, the Conference on Economic Cooperation among Developing Countries held at Mexico City from 13 to 21st September 1976, the UN Conference on Technical Cooperation among Developing Countries held at Buenos Aires in September, 1978, the Arusha Programme of Collective Self-reliance adopted in February 1979, the comprehensive resolution on ECDC, adopted by UNCTAD-V in Manila in May 1979, the Action Programme on Economic Cooperation adopted by the 6th Non-aligned Summit at Havana as well as the resolution on Policy Guidelines for Reinforcing Collective Self-reliance adopted in Havana.

K. K Bhargava is Joint Secretary, Ministry of External Affairs

Another important development has been the adoption at Havana of the resolution of Policy Guidelines for Reinforcing Collective Self-reliance among developing countries addressed to non-aligned countries which refers to granting one another priority of supply for their exportable primary products and commodities, joint projects relating to the creation of production and processing capacities, drawing on inputs available in non-aligned countries in the field of petro-chemicals, fertilizers, agricultural production, pharmaceuticals, etc., organisation of research and development of non-aligned countries on collective basis, increase in financial assitance to other non-aligned countries by all non-aligned countries in a position to do so, etc. In regard to the former subject relating to supply, the December meeting of the Organisation of Petroleum Exporting Countries (OPEC) also has taken some positive follow up decisions.

Collective Self-reliance

It is important to recall that the nature of relations between developed and several developing countries had undergone some modifications and new avenues for economic cooperation among developing countries had emerged as a result of certain developments in the early 1970s. Since then substantial increase in trade, financial transfers and joint production ventures among developing countries have taken place accompanied by diversification of relationship in these fields. Institutionally, while some of the multi-lateral institutions among developing countries that had been established earlier became stronger, several more have emerged. The practice of consultations and coordination to adopt common positions and strategies vis-a-vis other countries or group of countries has also gained a great deal of ground . There has been a boom in bitateral agreements on economic and techniral cooperation that have been concluded between developing countries. Certain developing countries particularly in Latin America have been following the practice of constituting Action Committees whereby whenever three or more countries agree, concrete schemes and programmes of cooperation are formulated and implemented through them. In several cases, sub-regional and regional schemes of economic cooperation have been worked out and institutions for implementing and overseeing such schemes of cooperation have been set up. OPEC also has been impelled both by considerations of its solidarity with rest of the developing world as well as by economic factors to consider programmes of cooperation through detailed examination of various proposals that have been put forward in this connection of programmes are now poised to implement that, with a view to acquire a better perception of the problems, the concerns and the interests of the oil-importing developing countries, the OPEC may consider instituting some mechanism for regular consultations with other developing countries. On the whole, the evaluation of developments suggests that the developing countries, which hitherto, were confining their action to the elaboration of steps and identification of programmes, are now poised to implement

economic cooperation programmes amongst themselves bilaterally as well as multilaterally by working out action-oriented and concrete proposals.

System of Trade Preferences

The other side of the balance sheet shows very little and tardy progress in regard to the establishment of a global system of Trade Preferences. There has been halting progress in cooperation to improve infrastructure particularly transport and communication among developing countries. The full potential of industrial cooperation remains, to a great extent, untapped and the working out of a project development facility as well as identification of concrete projects based on fullest use of complementarities and endowment factors is continuing on a very slow basis. Above all, there is the lack of organised efforts for improving the flow of financial resources from surplus developing countries to other developing countries for developmental purpose and for furthering the objectives and progrmmes of ECDC. Thus the implementation of the programmes of economic and technical cooperation among developing countries has fallen far short of declarations adopted by and the directives given by the leaders of the non-aligned and other developing countries and the expectations arising out of Ministerial Meetings of the G-77.

How can the technical, economic and political factors acting as constraints for the attainment of collective self-reliance be removed ? The weaving together of a network of contacts among countries, exchanges of information between themselves, coordinated decisions to face common challenges in the next decade are necessary. Other important requirements are the formulation of collective goals and policies and political level and adequate institutional arrangements for analysing common problems. Viewed in this context, E.C.D.C. would mean much more than the creation or strengthening of ties in commercial, financial and technological fields. It would thus encompass attitudinal transformation, correction of past historical distortions through alteration of external linkages of developing countries with other developing or developed countries, overcoming of the obstacles resulting from the smallness of the size of several developing economies, particularly in the context of setting up a base for heavy industry, formation of technical skills and imparting of professional education and finally, the improvement in their bargaining power vis-a-vis the developed countries. Such an approach will also ensure speedier progress in E.C D C

While recognising that the prime responsibility to work for increased cooperation among themselves and to develop new opportunities in this regard will continue to be theirs, developing countries will have to ensure the support of international financial institutions and agencies in the United Nations system and developed countries as this can facilitate the necessary investment capital for joint ventures and technical assistance activities. A decisive factor in the achievement of collective self-reliance is the strengthening of joint efforts by developing countries for developing critical scientific, technical and managerial skills. Similarly, technical cooperation among developing countries represent a unique instrument in tackling a great number of problems, particularly for those developing countries which have limited economic size and under-developed scientific and technological base.

The current importance of economic cooperation among developing countries and the pride of place for it in the new IDS arises from the fact that the role of the developing countries in the world economy is more important today than say a decade ago. There are, therefore, inter-relationships and linkages between economic cooperation measures among developing countries in key areas and implications of these measures for the world economy as a whole. It is, therefore, necessary that a political climate of mutual trust in regard to E.C.D.C. is created.

North-South Dialogue

Is it the uneasy and uncertain course of the North-South dialogue ever since the requiem for the Paris Conference on International Economic Cooperation and the subsequent disappointments, frustrations, exasperations and irritations that have been manifested because of lack of success in the Committee of the Whole, UNCSTD and at UNCTAD V which is propelling the developing countries to look for great cohesion, and integration at the horizotal level ? Or is it the realisation by them that close inter-se cooperation can have a multiplier effect on their development prospects ? In either case, the objective reality is that in the face of persistent and stubborn refusal of the developed countries to cooperate meaningfully in working out relationships based on equality, reciprocity and equitable mutual benefit, developing countries are examining the possibility of building up inter-dependent relationships among themselves based on complimentaries of their resource endowments and are seriously engaged in discussions among themselves in regard to the deployment of their own means to move market forces in the direction of desired objectives.

On the other hand, the developed countries pay lip service to the cause of ECDC. At times, they use the alibi of their own economic difficulties and consequent inabilities to discharge their responsibilities. Thus, for instance, they are increasingly referring to the need for more South-South financial cooperation and to greater South-South trade in manufactures in the face of their own poor record in the field of developmental aid and strong protectionist trends that have emerged in their economies. While not being tricked in by these arguments, the developing countries should enhance their cooperation with each other to increase each other's capabilities and to meet their development needs This alone will make ECDC an important ingredient of the new IDS. The readiness of the developing countries to assume a shared responsibility and common duty in regard to their development, cannot but sensitise the movement in the developed countries for action in their favour. To that extent, ECDC can also serve as a vital instrument for bringing about NIEO

Special Needs

An important question to be addressed relates to taking into account more fully the special needs of the disadvantaged group of countries, particularly the least-developed, the landlocked and the poorest among them in the programmes of ECDC and in the new IDS. The obvious answer would be that such programmes should, in a given framework of time, enable solution of the pressing problems faced by this group of countries and expedite removal of certain basic constraints which these countries face in their development process. To the extent that the economic cooperation among developing countries can also contribute to this solution, the programmes of econo-

mic cooperation among developing countries will have to incorporate special measures in favour of these countries. Such measures will naturally be of a differentiated character, their nature being dependent on the specific requirements arising from the situations of a particular group of these countries.

There is the need for the fruits of development to be evenly distributed among all developing countries. There is a certain urgency and topicality about this issue particularly because of rapidly changing economic scenario resulting in greater vulnerability of several developing countries, due to negative trends in world economy. For this purpose, it may be necessary that the process of review and reappraisal for the new international development strategy, in addition to its monitoring functions, should be extended into requisite discussions and negotiations on the less closely defined policy recommendations that have emerged so far from the North-South dialogue as well as for fully working out firm objectives of South-South cooperation, and agreed policy measures. This is indeed the dynamic context in which the functioning of the new IDS has to be understood.

Special Programme

In this connection, it is important to recall that the General Assembly in its Sixth Session had agreed upon a Special programme for the least developed, landlocked and most seriously affected countries when it adopted its declaration on the establishment of a New International Economic Order. Unfortunately, however, this special programme remained more as a statement of intent rather than of action and that subsequent intended measures of an international character could not be agreed upon because the necessary negotiations through which the special programme could be implemented had either not been initiated or concluded. The forthcoming Special Session of the General Assembly on Development that would be held later this year should draw appropriate lessons from this abject post-Sixth Special Session failure and agree upon built-in mechanisms in the new IDS for redressing such situations. It is equally important that the proposed Global Round of Negotiations should give adequate attention to the problems of the disadvantaged groups of countries as well as to the question of ensuring for all developing countries equitable benefits that should flow from participation in the formulation and applications of all decisions in the field of developments and international economic cooperation.

India's record in the field of economic and technical cooperation among developing countries speaks for itself. It has for more than a decade a well-defined programme of its own for technical and economic cooperation with developing countries. Under this programme, India has deputed its experts for technical assistance work abroad, has imparted training in India to presonnel from other developing countries, has undertaken feasibility studies for certain projects in the developing countries, has set up some projects abroad on turn-key basis, has gafted equipment and material and has also provided consultancy services. India also participates in several multilateral programmes, such as Commonwealth Fund for Technical Cooperation, Special Commonwealth African Assistance Programme, Colombo Plan, etc. At the Buenos Aires Conference on Technical Cooperation among Developing Countries, it announced its decision to set aside 5 per cent of its UNDP indicative planning figure for technical cooperation programme with other developing countries. India has participated in several joint ventures functioning in scores of developing countries. It has introduced concrete schemes with regard to tarrif reductions and is endeavouring its best for the early setting up of Global Systems of trade preferences. It is ready to examine concrete schemes of joint research with other developing countries.

At the same time, India is conscious of the advantages that can accrue through enlightened schemes of economic cooperation among developing countries, particularly in regard to meeting raw materials and energy requirements and in the field of financial cooperation.

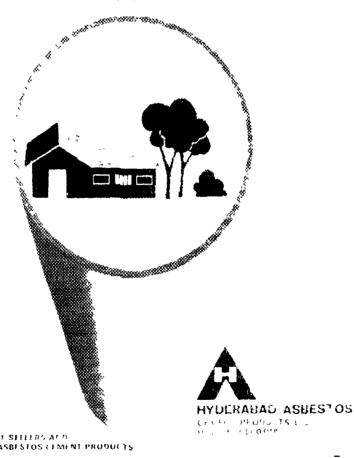
National Consensus

There is a national consensus that economic cooperation among non-aligned and other developing countries has now come to acquire an important place in India's foreign policy.

We must, however, reckon with the situation that in certain circles, the validity and viability of ECDC is being questioned. Some others are evaluating its usefulness. The sincerity of its proponents is being tested. Be that as it may, in the ultimate analysis, the value of economic cooperation among developing countries would be judged and its relationship with the New International Development Strategy and measures for bringing about a New International Economic Order will be evaluated by the speed and efficiency with which collective self-reliance among developing countries will be brought about and the contribution it makes to the process of sustained global economic development in the context of the accelerated development of the developing countries. This indeed constitutes for ECDC both a challenge as well as an opportunity.

□

"Producer associations can either become the instruments through which nations conduct a rational dialogue with consumers within the framework of a New International Economic Order, or for want of dialogue they will become increasingly the instruments through which the Third World takes such unilateral action as is demanded by the powers of survival and equity. The choice, therefore, is inevitably between dialogue and confrontation.......A housewife in America or Europe may be annoyed by the price of her lumps of sugar, but the increment which irritates her may be saving the children of a million sugar workers from malnutrition if not starvation."

—Mr. Michael Manley, Prime Minister of Jamaica in his speech at the meeting of Commonwealth Head of Governments, Kingston, 1975.

BOOKS

The Third World

The Third World : Problems and Perspectives : Edited by Alan B. Mountjoy (The Macmillan Press in association with the Geographical Magazine, London and Basingstoke, 1978) pages. 152+Further Reading+Index; (paper), Price £3.95 Net.

Meeting the Third World Challenge : Alasdair I MacBean and V. N. Balasubramanayam, (The Macmillan Press for the Trade Policy Research Centre, London, Second Edition, 1978) pages: xvi+251+ selected Bibliography+Index, (paper) Price : £3.95 net.

IT IS REALLY an interesting point to note that the problems in the third world have been receiving serious attention of the economists of the world. If the upper limit of gross national product per head which is "most widely used and probably the most misleading" of the several indicators to measure the economic development is set at £600 for a country to be included in the third world, the third world embraces about 100 nations of the globe, comprises 60 per cent of the surface of the earth and includes about 70 per cent of the human race, and of course gets a maximum share in the diseases like illiteracy, malnutrition, ill-health etc.

The two books under review are excellent volumes concerned with several challenging problems of the third world countries. **The Third World : Problems and Perspectives** is an edited volume containing 14 papers-all by geographers and earlier appeared in the **Geographical Magazine**. It is interesting to note that after finding that the 'thesis' and models of development described by economits in a conference on Development held at the University in Southern England, were far from realities of the African bush or the padilands of South-East Asia the geographers wrote this series of articles. The variety of issues discussed in these articles are of much general interest. The book provides a very good and interesting reading on several problems which range over several themes—the environmental hazards (by M. J. Eden), Population (J I. Clarke), Economic Planning (C. R. Patman), Technology (H. Bowen-Jones), Industrialisation (J P. Dickensan), Urbanisation (A. B. Mountjoy Trade and Aid (D. Hilling and W.T.W. Margan), Rural Development (D Grigg. K. Sultan, D. J. Siddle etc.), Infrastructure (D. Hilling) etc.

Some papers are exclusively devoted to the ills and problems of the third world countries, while several papers not only present an assessment of the state of these countries, but also present a picture comparing with the state of development in the advanced countries. The photes, maps, charts and tables and further to the readability of the book. This can be highly recommended for the under-graduate students interested in the global perspectives in general and the third world perspectives in particular.

In contrast, **Meeting the Third World Challenge** is a professionally competent study worthy of public consideration. The book is mainly falls into the area of international finance covering aspects like trade, aid, technology, foreign investment etc., apart from discussing several challenging tasks the third world countries are faced with such as education, health, nutrition, housing, population, employment, capital, overall development planning and inequality.

The authors are rightly of the view that the challenge of the third world is primarly a challenge to the leadership of the nations of the third world themselves. Without their will to develop, outside assistance will be of little value. They further assert that it seems unlikely that the rich countries have any genuine serious interest in promoting economic development in the third world, as a whole. The citizens of the various nations do not look upon themselves as the citizens of the world community, do not recognise the common element of humanity. The race, religious and national distinctions matter a lot. The poverty of mass of mankind in the world is not considered as a challenge to the rich nations. In fact, "the utility of enjoying a high standard of living may even be partly a function of having some one poorer to look down on". Hence it is the self interest of the rich nations, which may be the result of the existence of the cold war between the capitalists and the communists, or commercial interests like promoting LDC's exports of basic non renewable national resources like basic fuels, metals, fibres etc., to the developed countries or long run self interest of avoiding crisis because 'capitalist nations eventually arrive at a stage where they cannot absorb all the outputs of their industries, or other similar factors like attraction of skills as the case of immigrant doctors in the U.K. and political challenges or a combination of all these factors that is responsible for the present aid and trade relations between the developing and the developed countries of the world. Thus it may be clear that there is no genuine serious interest in promoting economic development in the third world as a whole. In this frame work the authors of the study search for areas of economic and social progress where they have interests in common. The areas, the size and magnitudes of challenge they pose are discussed in Chapter 2. The response of the state to meet the challenging tasks is described in Chapter 3. Chapter 4 gives an account of how the era of second Post-war Restructing—a package of policies like import liberalisation, relaxation of exchange controls, export promotions etc.,—has begun, and how it had laid the base for the outward looking policies in many developing countries, albiet at a high social cost. The challenge of technology is the theme of Chapter 5. Chapter 6 describes the rational of official aid to developing countries and the donor burden it involves. The authors describe how trade can be used as an effective instrument to build up a New International Economic Order free of poverty in Chapter 7. The role of foreign private investment in economic development and the numerous problems it involves are described in Chapter 8. The last chapter contains a few policy recommendation.

Meeting the Third World Challenge is a very well written one. The book also contains an annotated bibilography.

Both the books, in short, are very interesting and very valuable volumes which deserves to be carefully read by all those who are interested in the third world problems.

Jandhyala, B. G. Tilak

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Multinationals and Indian Export

Multinationals and Indian Export *by K. K. Subramanian & P. M. Pillai; Published by Allied Publishers Private Ltd; pages* 115; *Rs.* 30.

IN A GENERAL sense 'export' has become a magic word in India, everything from licensing to exchange permits get relaxed in the name of exports. The success stories of Taiwan and South Korea which have leaned towards export-led growth streategy provided a fascinating background for Indian policy makers to adopt the same without reservation. Such a policy quite often encouraged policy swings between restrictions and liberalisations and also gave sufficient room for administrative adhocism and discretion in implementation. Dr. J. Bhagavati rightly pointed out elsewhere in this connection 'Indian export policy is marked by pessimistic neglect and gross indifference until recently and a constellation of measures adopted so far provided a positive discouragement to growth and an inherent disincentive to export development.' Under the canopy of effective protection and a vascillating policy of export subsidization the export policy remained ambiguous resulting in serious policy mistakes. Instead of exploring the possibilities of improving indigenous production too much emphasis had been placed to participation of multinationals on export front which ultimately forced the limited resources to be wasted on importation of capital and technology without concrete results. The impact of multinationals on export performance of developing countries remained a neglected area until recently and the present study tries to fill this vacuum in a humble way by presenting a comparative analysis of the export behaviour of foreign collaborated units and their indigenous counterparts in a number of similar products of selected industries such as engineering, chemicals and pharmaceuticals in the Indian context.

The study starts with a few lines of description and a few lines of prescription and a concluding section well ornamented with useful policy suggestions. It examines the import intensity, incidence of transfer pricing, foreign exchange gain, and overall trade impact of foreign collaboration. An evaluation of value added contribution of the export of manufactures has also been attempted. A special enquiry is also conducted into the income generation behaviour of firms located in the export processing zone. The resulting analysis is basically simple and is obtained with precision and supported by statistical evidence.

After delineating the traditionalists' viewpoint regarding import substitution in a skeleton form the authors tried to synchronise theory with empirical evidence subjecting the same to a micro-level investigation on a selected group of industries. Indian export policy leaned heavily towards importation of capital and technology right from its inception and wavered endlessly by a vascillating system of inefficient administrative controls. Though the commodity position was very encouraging, the Domestic Resource Cost (DRC) of new exports went on increasing without restraint and forced the economy to a deplorable state of technological dependence and the slogan 'export for export's sake' had become a controversial one for endless academic debates. The incentive content in the Indian exports made production non-competitive all the time and the position in terms of market composition was also uneven, Indian manufactured exports found favourable corners only in developing countries markets. Growth process in respect of these industries' indicated inward orientation to firms with foreign association|control. The relative performance of the cluster of indigenous firms without any association was marginally better. The theoritical reasoning based on Product Life Cycle Model of International Trade Theory suggests that the higher the foreign control, the higher the export performance but empirical analysis of Indian experience did not prove any direct|positive relation between foreign collaboration and export performance. Contrarily, export performance was found positively related with local control of the enterprise. Even in respect of capacity to export, the export performance of foreign controlled firms was found poorer than indigenous counterparts and it was dismal in some cases exhibiting multinationals' limited motivation to contribute to the export development of the host developing country. Regarding the question of transfer pricing it was found that foreign controlled firms paid exhorbitant prices for the same raw material which the indigenous firms were able to obtain at a concessional price. Further, the value added content of the cluster of foreign controlled firms producing exclusively for exports as in the Export Processing Zone, also was found to be unfavourable when compared to the cluster of Indian owned counterparts. Overall trade impact of the foreign controlled firms did not make any positive contribution to the gainful development of Indian exports.

The study outlining the shallow empirical basis of the Indian Export Policy bears stamp of objectivity. The authors successfully tried to dispel several policy imaginations which were or are hanging on in the minds of policy makers till now and imporpriety of ivory tower thinking and outright importation of ideas borrowed from the experience of developed market economies had been pointed out throughout the study.

The study ventilates the policy mistakes without magnifying them; the method adopted for distilling the literature and interpreting the same with success against factual evidence had been a very pleasing academic exercise Initiating a live discussion on this topic and providing several constructive suggestions and viable alternatives, the authors did an invaluable service in exploring this neglected area in recent times and we have no hesitation in rating this as a useful research publication. Financed by CSIR, the report successfully highlighted the irrationality of the Indian export policy, the gaps in technological plans and the myth regarding the positive contribution of Multinationals to export development and it will definitely establish its rapport with readers on a wider scale in due course.

V. Suryaprakasa Rao

Atoms

Atoms of Hope—by Mohan Sundara Rajan ; *Allied Publishers Private Ltd.—pages 155—Price Rs. 50.00*

MOHAN SUNDARA RAJAN is well-known for his efforts in popularising science through various mass media. The present book 'Atoms of Hope' is another gift to the general readers from Mohan Sundara Rajan to make them understand the bright side of the nuclear energy and its application for good of humanity and the technological options to solve energy crisis. It may help the general readers to understand some of the most controversial issues on nuclear energy hotly debated in international and national forums in recent years. The book is an uptodate and comprehensive survey of nuclear technology including a glimpse of the future possibility with special reference to India. After reading the book, a reader will ponder that perhaps nuclear energy is the saviour of mankind in future.

The 'Atoms of Hope' gives a panoramic view of the nuclear technology from the concept of atomic structure to development of various technology to harness the nuclear energy for multiferious uses. It gives clearly an idea of the mechanism of chain reaction and its control; description of Reactors—their features and limitations; their safety factors and probably dangerous etc. It deals with the complex problems of waste disposals ; the fuel cycles and alternatives to minimise the evils of atomic weapon fabrication; radioisotopes and its various uses from delection of human maladies, to improvement in agriculture and application to industry etc.—the boon to mankind.

A Chapter on India's nuclear development programmes tells about Late Dr. Homi Bhabha's vision and achievements of India's young scientists and technologists to put the country in the scientific map of the world. It speaks of India's struggle to achieve self reliance in a nuclear mono-polistic world and her future strategy in accordance with her defined policy and aim of using the atom only for peaceful purpose.

The book takes a close look at the status of nuclear energy in future and examines the trends, fear and hopes concerning it; the challenges of deriving power from fusion in place of fission of nuclei and possibilities of a marriage between 'fusion' and 'fission' to evolve a more complex system.

The book ends up with an evaluation of the problems that limit the atoms from fulfilling the hopes of mankind. It also treats the problems of the bomb secrets, its theft, accidents at nuclear plants and other allied issues. It also deals with the 'unjust' 'Nuclear Proliferation Treaty' and its attempt to restrict the free flow of knowledge of nuclear technology.

Since Mohan Sundara Rajan has given in Chapter 1, the oldest national view of the atoms as interpreted by the ancient Greeks, it would have been better, if he had mentioned the name of Kanada, the first expounder of all atomic concept in ancient India about 600 BC. Kanada had mentioned the atom as "Paramanu" and the molecule as "anu"—the smallest of a matter present in the nature.

Wtihout any hesitation one can strongly recommend "Atoms of Hope" to all who are interested to know about the impact of science and technology in the fast changing world of today specially to the students of Higher Secondary Schools and Colleges.

Biman Sen

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India's Role in UNIDO

have already been held to provide inputs for the Conference. The work in the Conference is likely to be divided into three main parts, the Plenary and two Committees. After the inauguration, in the Plenary the office-bearers of the Conference would be elected. The participating countries would also make their statements on various aspects of the agenda. The two Committees would examine in depth the items on the agenda. There would also be towards the end, a drafting Committee which would finalise the declarations, resolutions, etc. and bring them before the Plenary for adoption.

Even during the Conference, there would be meetings of various groups who have common interests. In order to accommodate the various meetings, of the Pleneary, the Committees, the Groups etc. the Vigyan Bhavan which has one large hall and seven other smaller halls has been kept in readiness. Simultaneous interpretation systems are avaiilable in these halls so that delegates speaking in any of the accepted languages can be understood by the others through the interpreters whose voice comes to the delegates via the earphones. The Secretariat of the UNIDO is likely to bring about 300 persons for servicing the Conference. About 140 countries and 100 inter-Government and non-Government organisations are likely to be represented at the Conference. It is expected that anywhere between 1500 to 2000 persons would be participating in the Conference.

There is hope that at the end of the Conference, the declaration or other resolutions that may emerge would be unanimous. There are some issues which touch on vital national interests and it is to be seen whether they can be resolved at one go. The Conference will be a major step towards the goal of achieving a new economic and industrial order in the world. In the final analysis it is only through meetings of this nature, through intensive discussions, and negotiations, each group trying to impress and persuade the other to its point of view, that the international economic structure and world industrial fabric in particular can be re-structured with the least bitterness or acrimony. □

Development of Tuna Fishing

Gopinath
Assistant News Editor
A.I.R. Trivandrum

INDIA has a coastline of 5600 kms. commanding 48 million hectares of inshore and offshore waters. But it is exploited only partially. In 1975, the world production of fish was nearly 70 million tonnes. But India's share was only 2.3 million tonnes. This included 1 4 million tonnes from the ocean.

According to FAO, India has climbed two steps up the fishing ladder in 1977, moving from the eighth rank in 1976 to the sixth. In 1977 the fish catch of the top ranking countries namely Japan, Russia, China, Norway, the USA, India, Peru and South Korea was 10.7 million, 9.4 million, 6.9 million, 3 6 million, 3.1 million, 2.54 million, 2.52 million and 2 4 million tonnes respectively The Union Ministry of Agriculture is now considering measures for development of Tuna fishing in the country The advantage of it is that it does not require sowing or other connected work. The expenditure involved is only for harvest.

The Minicoyites are the pioneers in tuna fishing in the country. Minicoy, the Southern-most Island in Lakshadweep, is situated nearly 200 miles west of Trivandrum, having an area of 4 4 Sq. Km. and population just over 5300 The people of this island are really the children of the sea, and have dared to go out in the deep sea for tuna fishing from time immemorial. It was unknown to others till recently. The potential skipjack tuna resources of Lakshadweep waters are great Lakshadweep tuna (Katsuwonus pelamis), known as 'Chicken of the sea' earns high price in international markets. An adult tuna is more than half a metre in length with a smooth and shining surface. It is estimated that there are two hundred thousand tonnes of tuna in the Indian waters. Owing to lack of advanced fishing technology, Indian tuna catch is only 6000 tonnes per year. It accounts for about three per cent of their exploitable resources. Significantly, the Japanese catch 75 per cent of their tuna resources and other countries on an average of 22 per cent.

The pole and line with live bait practised from olden days, by the Minicoyites is found to be one of the most effective methods to capture tuna. Specially made large and fast sailing cum rowing boats with platforms at the rear are required for tuna fishing. Live baits are kept in sea water inside the tank of the boat. The baits are small fish, netted in the lagoon and kept in special baskets floating in it till taken into the tanks of the boats. The boats are taken out of the lagoon into the deep sea. The men stand on the platform at the rear and watch for tuna shoal. On sighting a shoal of tuna, the boats are taken near it. Two men are engaged in tossing overboard the live baits. Others crowd on the platform and dash their glittering hooks into the shoal. The greedy fish bite the hooks taking them for live baits. As soon as each man feels a bite of the tuna, he hauls in the hook and swings in a tuna, all in split second motion. The tuna falls smoothly from the barbless hook into the boat. The hook is again put into the shoal in no time. A good number of tuna, sometimes upto 500 in 15 minutes is caught by men of a single boat. The operation is really worth seeing. Tuna fish catching has spread to all islands in Lakshadweep and Andaman and Nicobar islands Boats used for it have been modernised replacing the country boats.

Tuna is processed in the most hygienic way into a traditional product called 'Mas' by Minicoy women The fish is gutted and cleaned. Then the fillets of tuna are half-cooked, smoked and hard dried in the sun for three days. 'Mas' is more or less similar to the Japanese tuna product 'Kat suo-fushi'. 'Mas' worth Rs. 25,000 was exported in 1920 from Minicoy to Sri Lanka and mainland. Its export rose to Rs. 3.5 lakhs in 1954 and to Rs. 6 lakh in 1956.

In order to catch international market for tuna, a modern tuna canning factory, the first of its kind in the country was established in Minicoy by the end of 1969. The installed capacity of this factory is two lakh tins per year, which can be doubled if necessary. Canned tuna has been exported to England, Belgium and Spain during the last two years.

Exploitation of tuna resources of the sea will bring immense prosperity and foreign exchange earnings to the country. The most modern methods of using trawlers and other equipments specially designed for the purpose of tuna catching in which foreign countries have made tremendous strides should be introduced immediately for commercial exploitation of tuna. Until large scale arrangements on scientific lines are made, fishermen of the east and west coasts may also have to be trained in the present method of deep sea tuna fishing by Minicoyites in order to increase the catch to a considerable extent. □

Declaration..........
(Cont'd from Cover II)

losing sight of the interest of other developing countries;

(d) The right to every country to adopt the economic and social system that it deems to be the most appropriate for its own development and not to be subjected to discrimination of any kind as a result;

(e) Full permanent soverignty of every State over its natural resources and all economic activities. In order to safeguard these resources, each State is entitled to exercise effective control over them and their exploitation with means suitable to its own situation, including the right to nationalisation or transfer of ownership to its nationals. this right being an expression of the full permanent sovereignty of the State. No State may be subjected to economic, political or any other type of coercion to prevent the free and full exercise of this inalienable right,

(f) The right of all States, territories and peoples under foreign occupation, alien and colonial domination or apartheid to restitution and full compensation for the exploitation and depletion of, and damages to the natural resources and all other resources of those States, territories and peoples;

(g) Regulation and supervision of the activities of trans-national corporations by taking measures in the interest of the national economies of the countries where such trans-national corporations operate on the basis of the full sovereignty of those countries;

(h) The right of the developing countries and the peoples of territories under colonial and racial domination and foreign occupation to achieve their liberation and to regain effective control over their natural resources and economic activities;

(i) The extending of assistance to developing countries, peoples and territories which are under colonial and alien domination, foreign occupation, racial discrimination or apartheid are subjected to economic, political or any other type of coercive measures to obtain from them the subordination of the exercise of their sovereign rights and to secure from them advantages of any kind, and to neo-colonialism in all its forms, and which have established or are endeavouring to establish effective control over their natural resources and economic activities that have been or are still under foreign control.

(j) Just and equitable relationship between the prices of raw materials, primary products manufactured and semi-manufactured goods exported by developing countries and the prices of raw materials, primary commodities, manufactures, capital goods and equipment imported by them with the aim of bringing about sustained improvement in their unsatisfactory terms of trade and the expansion of the world economy;

(k) Extension of active assistance to developing countries by the whole international community, free of any political or military conditions;

(l) Ensuring that one of the main aims of the reformed international monetary system shall be the promotion of the development of the developing countries and the adequate flow of real resources to them;

(m) Improving the competitiveness of natural materials facing competition from synthetic substitutes;

(n) Preferential and non-reciprocal treatment for developing countries, wherever feasible, in all fields of international economic cooperation whenever possible;

(o) Securing favourable conditions for the transfer of financial resources to developing countries;

(p) Giving to the developing countries access to the achievements of modern science and technology, and promoting the transfer of technology and the creation of indigenous technology for the benefit of the developing countries in forms and in accordance with procedures which are suited to their economies;

(q) The need for all States to put an end to the waste of natural resources, including food products;

(r) The need for developing countries to concentrate all their resources for the cause of development;

(s) The strengthening, through individual and collective actions, of mutual economic trade, financial aid and cooperation among the developing countries, mainly on a preferential basis;

(t) Facilitating the role which producers' associations may play within the framework of international cooperation and, in persuance of their aims, *inter alia* assisting in the promotion of sustained growth of world economy and accelerating the development of developing countries.

5 The unanimous adoption of the International Development Strategy for the Second United Nations Development Decade was an important step in the promotion of international economic cooperation on a just and equitable basis The accelerated implementation of obligations and commitments assumed by the international community within the framework of the strategy, particularly those concerning imperative development needs of developing countries, would contribute significantly to the fulfilment of the aims and objectives of the present Declaration

6. The United Nations as a universal organisation should be capable of dealing with problems of international economic cooperation in a comprehensive manner and ensuring equally the interests of all countries It must have an even greater role in the establishment of a new international economic order. The Charter of Economic Rights and Duties of States, for the preparation of which the present Declaration will provide an additional source of inspiration, will constitute a significant contribution in this respect. All the State Members of the United Nations are therefore called upon to exert maximum efforts with a view to securing the implementation of the present Declaration, which is one the principal guarantees for the creation of better conditions for all peoples to reach a life worthy of humany dignity.

7 The present Declaration on the Establishment of a New International Economic Order shall be one of the most important bases of economic relations between all peoples and all nations □

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OUR ACHIEVEMENTS

Heavy Demand for Handlooms

HANDLOOMS are merging as a tough competitor to mill-made fabrics. Sales have increased enormously in the recent months and there is a heavy demand for them throughout the country.

The upturn in sales was because of a strong "buy handloom" mood among people, which is not a temporary phase.

There were many reasons for the current strong consumer preference to handlooms. The prime reason however was the organisation of a series of national handloom expositions in recent months Sales in these expo's have already netted about Rs. 10 crore.

Innovative designs and the ability of handloom sector to be trendy with the times have also contributed greatly to the success of handlooms. The Weavers services centres were also responsible in a large measure for the booming sale.

BHEL Bags Export Orders

PUBLIC Sector Undertakings under the Deptt. of Heavy Industry secured export orders of the value of Rs. 10.11 crore during November, 1979. Cumulatively the value of the export orders secured during April-November, 1979 amounted to Rs. 71.71 crore compared with Rs. 221.30 crore during the corresponding period of the previous year.

Outstanding export orders, however, stood at Rs. 904.77 crore at the end of November, 1979 compared with Rs. 889.10 crore at the end of the same month in 1978. The Bharat Heavy Electricals Ltd. achieved a further breakthrough in the export of power generating equipment by securing two export orders in November 1979 for supply of hydro-generating equipment to Malaysia and Thailand for a total value of Rs. 8.98 crore.

The performance of the public sector undertakings in execution of the export orders improved from Rs. 114.11 crore during April-November, 1978 to Rs. 144.19 crore during April-November, 1979 registering an increase of about 27 per cent.

FACT Output at all-time High

FACT has achieved higher fertilizer production in its Udyog Mandal and Cochin division during the year 1979 compared to the previous year

Production in terms of nutrients of nitrogen and phosphorus pentoxide stood at an all-time record figure of 1,64,611 tonnes of nitrogen, showing an increase of 16 per cent over the previous year's figure of 1,41,400 tonnes and 72,593 tonnes of phosphorus pentoxide showing an increase of 7 per cent over last year's figure of 67,865 tonnes. A highlight of this achievement was the record production of 2,18,074 tonnes of urea compared to 1,63,682 tonnes production during 1978.

Sales turnover touched the level of Rs. 98.56 crore during the year compared to Rs. 83.07 crore in 1978.

New Power Transmission Line

THE PLANNING COMMISSION has accepted the feasibility of Kerala setting up a power transmission system at an estimated cost of Rs. 47.75 crore during sixth plan period.

The scheme envisages construction of a 220 KV transmission line, a 110 KV transmission line, a 66 KV transmission line and the establishment of a new sub-station and the extension of existing sub-stations.

Mini Dairy Project

HARYANA Government have planned to set up 1600 Mini Dairy units at a cost of Rs. 3.68 crore providing initial employment to 40 trained youth in dairy husbandry. Each of the beneficiaries would be advanced a loan of Rs. 2300 towards the construction of sheds and purchase of milch cattle which will be insured by the Government as subsidy.

Cementitious Material from Stone Rejects

CENTRAL Building Research Institute has developed a quality cementitious material from the rejects of flooring tiles, in Ramganjmandi near Kota, in Rajasthan. This material mixed with three parts of sand produces strengths comparable to 1 : 6 cement sand mixture after 28 days. The strength increases three to four times in about an year's time. It has been used at Kota by Rajasthan Housing Board It economises 20 per cent cost.

Fact Diversifies

FEDO, The Engineering Consultancy Division of FACT, has been awarded the turn-key job of design, supply, installation and commissioning of the LPG cylinder handling, filling, testing and despatch facilities in the Mathura Refinery of the Indian Oil Corporation Limited The fully mechanised system capable of filling at the rate of 2400 cylinders per hour has been developed by FEDO, based on its own know-how.

New Technology for Better Refractories

THE CENTRAL Glass and Ceramic Research Institute has developed new technology for the manufacture of bloating type refractories. The refractories are used in casting pits of steel plants. With the present installed capacity of 10 million tonnes of steel, Indian steel plants need some 1.3 lakh tonnes of such refractories.

Record Profit of Rourkela Steel Plant

ROURKELA STEEL PLANT has earned a record net profit of Rs. 47.24 crore during 1978-79. This is approximately two and a half times higher than the previous year's profit of Rs. 19.10 crore. Now, the turn over of Rourkela Steel Plant crossed Rs. 3,000 crore mark and it has contributed around Rs. 772 4 crore to the exchequer so far.

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Chief Editor
P. C. Roy

Editor
Sethu Rao S

Assistant Editors
P. Perumal, R. R. Rao

Sub-Editor
Vijay Verma

Senior Correspondents

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HYDERABAD : B. N. Murthy
MADRAS : T. R. Panchapagesan
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GAUHATI : R. N. Bez Baruah

Photographic Officer : K. S. Nagaraj
Artist : P.K. Sen Gupta
Advt. Manager. T. R. Maheshwari

Editorial Office

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Challenge and Response

THE ECONOMY of the country, if not in shambles, presents a dismal picture, darkened by spiralling prices. A price rise of about 20 per cent combined with an urgent need for increase in investment of about 16 per cent next year, if we are to hit the revised Sixth Plan target of Rs. 71,000 crores, will be viewed with utmost alarm by the financial administrators. Critics have expressed their doubts whether even at the level of investment envisaged in the Plan, the country can achieve an annual rate of growth of three and a half per cent, not to speak of over four and a half per cent. It is as yet a moot question whether the search for additional funds will lead to intensified efforts to raise resources through additional taxes or to a drastic cut down of planned investment in 1980-81. Any decision to freeze the level of investment will mean virtual abandonment of the Sixth Plan and a Plan holiday of the sort we had during the years 1966-69. In such eventuality the country will be thrown back to the pre-Plan days when ad-hoc investment on the basis of availalble resources used to be made. It is heartening to note that the Minister of State for Finance, Shri Jagannath Pahadia told the Rajya Sabha that the government was not contemplating any Plan holiday.

The maladies afflicting the country, however, are fairly wide-spread and innumerable. The underprivileged, disadvantaged ad oppressed continue to be the dupes of tomorrow without having for themselves the barest necessaries of life today. The vested interests of all kinds are trampling them down. A question has been pertinently raised whether the organised labour in the key sectors of the economy should be allowed to take away a somewhat larger slice of the national cake at the expense of other deprived sectors of the society. Distortions have palpably occured in the distribution of incomes and in the very pattern of development. The curbs in conspicuous consumption by the affluent few have failed in the same way as the measures taken to contain the demands of organised labour. Despite huge investments in green revolution rural poverty has increased The revised minimum needs programme has obvious merits and a practical bias. Briefly there should be enough food for all to eat, adequate shelter, clothing, employment and simple comforts. People must have clean drinking water, simple and effective medical services and an educational system that works. Our manifest failures to provide all these in the course of the last three decades of planning only underlines the need for a new strategy where the macro-level perspectives are mixed up with micro-level needs. A centralised plan need not be inconsistent with devolution of authority for assessment of micro-level needs and capacities. A sharper edge will have to be given to the concept of rural development, correcting at the same time urban bias if there is any.

Any appropriate balance has to be evolved where the structural change can take place with the active participation of the people.

The unionisation of the rural poor who are the suffering majority is being urged upon from various forums by a number of planners and others interested in improving the lot of the deprived. It will certainly help mobilising the people to whom the benefits of planned development have not reached as envisaged. Many of them are illiterate, impoverished and hapless victims of a transitional society. Very often they have no knowledge of the rights conferred on them by the Government, sometimes they do not know how to avail of the beneficial socio-economic measures intended for them. Since the public delivery system for the rural poor has many loose ends, the unions of the poor can surely tie up the many loose ends. Even so, the concept of such unionisation is quite new in rural society and it needs to be spelt out in concrete terms to ensure the smooth functioning of village unions within the frame-work of a democratic policy, which believes in decentralisation of power and planning at the grass roots. Response from the beneficiaries may not be tardy. ☐

Industrial and Technological Dimensions of the Five-Year Plan (1978-83)

V.G. Rajadhyaksha

IN ORDER TO KNOW the technological and industrial dimensions of the Draft Plan, it is necessary to see them against the background of the broader objectives, which underlie the Draft Plan namely the alleviation of poverty mainly through the creation of employment opportunities and the provision of the basic minimum needs to the poorest sections of the population. Three other basic objectives are an acceleration in the rate of growth of the economy, a reduction in income disparities and the continued drive towards self-reliance. There is yet another more implicit objective—that all this must be achieved without endangering price stability.

Misconceptions

It is quite clear that all these objectives are not totally mutually compatible in the sense that any one pushed to the limit would retard the attainment of the others. To quote a simple example, greater outlays on the minimum needs programme, however desirable they may be, would leave inadequate resources for more directly production-oriented programmes. There is an impression in some quarters that nearly all the State Governments have reacted violently to it and that some of them have, in effect, repudiated it. They have in fact done nothing of the kind. Hardly any of the basic objectives or proposals of the Draft Plan have so far been questioned either by the full NDC or the NDC Committee or indeed by the first meeting of the Working Group set up by the NDC Committee.

The broad contours of the Draft Plan are really now no longer so indefinite as they are made out to be and given the constraints of resources in the economy and having accepted the major objectives and proposals for achieving them, the room for major changes is relatively limited.

The second popular misconception about the Plan, presumably based on the investment figures, is that it is an anti-industry Plan. It is totally misleading to compute the ratio of the public sector investment in the Industry and Minerals sector to the total investment as between the Fifth Plan and the Draft Plan and conclude that because this figure has fallen, this shows an anti-industry bias. First of all, such ratios ignore the structure of the sector and compare the non-comparable. However, even assuming such ratios have some meaning, then it is much more relevant to compare the total industrial sector which includes the energy components and especially power. Nobody would contend that power generation, transmission and distribution is anything but an industrial activity.

If the public investment in the industrial sector defined in this wider sense is worked out, it will be seen that it takes almost exactly the same share of the total public sector investment as in the Fifth Plan. However, the structure of the investment is qualitatively vastly different, a much larger proportion of the total going to development of energy sources especially power.

Now to the main theme of the industrial and technological dimensions of the Draft Plan. A few facts are worth pointing out. Since 1921, this trend has been remarkably steady over the last 50 years, the proportion of the labour force entering the market that has been absorbed by organised industry has consistently hovered around 10 per cent. About 72 per cent of the labour force has drifted into agriculture and another 18 per cent into the rest of the unorganised sector over a period in which population has grown to 2.5 times. The possibilities for increasing the land under agriculture is extremely limited and in the past it has grown only at the cost of our forests with results of which we are only too well aware. The recent floods are a grim reminder of what deforestation and erosion can do to our rivers and dams. There is clearly a limit to the extent which agriculture howsoever intensively it is done, can absorb new labour as well as deal with the vast backlog.

One of the main considerations that will increasingly have to go into making technological choices as well as locational choices for industry is the environmental and energy implications. There are many pressures—economic and social—driving us towards technologies which make increasing use of such energy uses. In this article, Rajadhyaksha discusses some of the social and economic choices that were kept in mind while formulating the Draft Plan and the technological and industrial imperatives that flow from them.

Emphasis on Employment

The conclusion is inescapable that the pattern of industrialisation that we have adopted in the past requires to be carefully examined. Organised industry's contribution to our technological self-reliance in many fields, to our defence capability, to our ability to enter a wide variety of non-traditional export markets, to the creation of a basically sound and dispensed transport and power infrastructure has been a remarkable one.

Rajadhyaksha is Member, Planning Commission. Based on a speech made at Bombay.

But none of its proponents will claim that it has made a significant contribution to solving our employment problem or been a material factor in reducing income disparities. Indeed it can be accused of aggravating them.

If the objectives of the Plan are to be served, it is clear that emphasis will have to be given to employment creating activities not only in agriculture but in a host of allied activities such as animal husbandry, forestry, horticulture, fisheries and service activities such as transport, building and trade, which are complementary and employment intensive must be encouraged. Most of all industry which absorbs some 43 per cent of all public sector investment must acquire a much more employment intensive character.

This emphasis on employment generation is important not only because it is a major human and social problem which, if not solved at a pace which is perceivable, will threaten the very structure of our political and social fabric—a fabric in which all of us here enjoy a very privileged position. It also happens to be the only way that the economy can generate a sustained and rapidly growing demand for a wide variety of essential consumer goods in which there is already considerable surplus capacity, such as foodgrains, textiles, sugar and so on. It is this demand working itself back into increased off-take of intermediate and basic goods that will allow balanced and rapid industrial growth to take place.

There is yet another very basic compulsion to the preparation of any Plan. This is the resource constraint. But stretching the outlays especially in the public sector, significantly beyond the figures indicated would become unacceptably inflationary. Indeed compared to earlier Plans, the step up is by no means low.

The technological and industrial dimensions of the Plan must be seen against these two objectives namely, employment creation and price stability. While in certain parameters of the Draft Plan, there appears to be little room for manouvrability, there are many in which the Draft Plan is truly a Draft Plan and on these, the Planning Commission would welcome as wide ranging a dialogue as possible. Indeed, discussions with groups of economists drawn from all walks of life on the economic framework of the Plan, especially the projections of employment generation, have already started. It is the intention to begin such dialogues in the area of industry also. In the vital fields of transport, there is already a high level committee which will listen to the views of all those who are affected by transport policies and projections before framing their recommendations. A similar committee has been set up in the energy sector.

Given our objectives, two issues in particular become important and controversial. These are firstly 'make or buy' decisions and secondly appropriate technological choices. Let me deal with the 'make or buy' decisions first. Unlike in the past there will be a much closer look at the economies of import substitution and any such proposal which means an increased cost to the economy will not be supported except where strategic considerations are involved. Even in many fields where we are internationally low cost producers such as steel, fertilizers, paper and even petroleum, we are projecting imports running into several hundred crores. It was quite open to the Planning Commission to plan for self-sufficiency through greater indigenous production in all such materials except petroleum. What would have been the implications of doing so? Let us take steel. We are planning on net imports of about a million tonnes or so in 1986-87. To have avoided this would mean an additional expenditure of approximately Rs. 500 crore in the period 1978—83. Similarly, it would have been possible to plan for producing another million tonnes of nitrogenous fertilizers by 1982-83 so as to close the gap between demand and indigenous production. This would cost, inclusive of infrastructural inputs, about Rs. 1000 crore. It really does not make all that difference in the last analysis whether the projects are in the private or public sector when it comes to investments of this magnitude, as the bulk of the resources have to come from Government controlled fund of one kind or another, either financial institutions or the budget.

If one adds up all the capital intensive products that could be made in the country in order to meet indigenous demand, one finds that the resources available for other sectors come down sharply. We must then ask our critics, given that the total kitty is inelastic are they prepared to accept the implications. A second but less important point is that in calculating the resource base of the Plan, credit has been taken for utilising about 1200 crore of foreign exchange resources. If all these imports are stopped, the resource base of the Plan will shrink. However, lest it be argued that this is exposing the economic development of the country to the risk of being held to ransom by exporters, care has been taken to ensure that the areas in which imports have been planned are those in which there are numerous suppliers in many countries and that the imports of any commodity do not exceed a small proportion of the world trade in that commodity. The adverse impact this would have on our balance of trade is proposed to be neutralised by stepping up the exports of labour-intensive goods such as garments, leather goods, light engineering products, jewellery and so on where we have all the raw materials and skills.

Choice of Technology

The second controversial area is the choice of technology or the need for using appropriate technologies to use a more fashionable term. The industrial policy statement has classified industrial products into those exclusively reserved for the cottage and village and small scale sector while the rest with some restrictions on the socalled large and foreign houses is open to everybody. The format of the Plan is subject based. In each of the subject sectors, the role of the private sector has been spelt out to the extent possible. Moreover, there is a recently announced statement on industrial policy. It deals with licensing, location, financing, price control, exports, import substitution, sick industries, sizes of units, etc. The current capacity, the capacity required in 1982-83 and in some cases upto 1987-88 has been indicated for a large number of products and the part that the public sector will play has in most cases been specifically indicated. By inference one can conclude that the rest has been left to the private sector. In working out the investment a rough exercise on internal resource generation and lending by financial institutions to meet these physical targets set for the private sector has also been carried out. What more could have been said about the private sector. There are also some misstatements in the background paper namely that the medium and large scale sector can enter only the fields of cement, fertilizers and paper. This is totally incorrect.

To come back to the technology question the reservation of products for different types of entrepreneurs itself implies conscious technological choices and is partly justified on the basis that the market mechanism is not an adequate instrument for dealing with the problems of widespread unemployment and under-employment. There are other considerations like dispersal of industry, diffusion of ownership which also lead to policies of reservation but they are not germane to this discussion.

Where products can be produced competitively in the cottage or small scale sector, and there are several such products, the need for any protection disappears and there are no hard economic choices. Where the cost advantage of large or medium scale manufacture is large, again there is no argument and reservation in such cases would be positively harmful to the economy. It is where the difference in production costs inclusive of distribution charges is relatively small but the employment consequences very large that the choice becomes difficult. In such cases if one were to opt for the higher direct cost but more employment intensive technology would we be necessarily making a bad economic choice?

Let us look at the alternatives. In Maharashtra, there is the employment guarantee scheme (E G.S.) which is the nearest thing to unemployment insurance so far devised. It is however not always possible to find genuinely productive work for everybody in every village within a reasonable distance. The cost of any wages paid for doing no work or doing more essential work in the strict sense of the term, is ultimately borne by the tax-payer. It would also be idle to pretend that the E.G.S. will remain confined to Maharashtra It has already found imitators in some other States and it is only a question of time before it is sought to be brought in in on a national scale in one form or another. The real question therefore is how does one lighten the burden on the economy of having to create an income for the unemployed or supplementing the income of the underemployed. Is it cheaper to do it through the appropriate technology route or only through the E.G.S. route? Would a judicious combination of the two must minimise the element of non-production work?

One of the arguments advanced against appropriate technology (in the employment generating sense of the term) is that it leads to wastage, and the quality of the products is unsatisfactory. Is this not at least partly so because these are fields in which very little R&D has been done? Very few of our scientists and technologists seem to find any challenge in improving the quality and reducing costs of products made by the cottage and small scale industry. They would often prefer to concentrate on R&D in areas which keeps them up with the 'Jones' of the developed world. However, it would be wrong to pick on the scientific community alone This 'developed world' bias permeates our entire administration, academic and profession ethos and to my mind presents the biggest obstacle to achieving the targets of the Draft Plan.

A reference has been made to the choice of technology in sugar. There is a decision not to license any more new sugar plants but this is primarily because there is considerable excess capacity already installed or under erection, well beyond the likely growth in demand for sugar for a few years. What the exercise has attempted to show is that open pan sugar assuming we are prepared to accept lower quality levels has a big pay off in employment terms. You will, however, see a reference in the Draft Plan to mini-sugar plants which are really small sized vacuum sugar units. This is precisely what I mean by applying science and technology to such problems. Recent studies show that such units besides giving much higher sugar recovery figures than the conventional khandsari units to produce a quality of sugar comparable to large scale units at slightly higher costs but with almost the same employment benefits as khandsari units. May be this is the appropriate technology we are looking for. Government however have not yet taken a final policy decision.

An example of inappropriate technology is our mini-steel plants designed to produce mild steel at unacceptably high cost with hardly any major pay off in employment and consuming disproportionately large amounts of a highly capital intensive and subsidised input namely power. Does all this talk of appropriate technology-emphasis on cottage and village industries, mean moving the clock back? It depends on which clock we are looking at. If the production systems of the developed world in their entirety is the clock then may be in some sectors we are going back. If what we are measuring on the clock is the time required to get our poorest people a decent standard of living then can we say we are not trying to move the clock forward?

An area of scepticism rather than controversy and a point frequently made is that even assuming the technological choices implicit in the Draft Plan are correct, is the country organised to undertake such a significant shift of production from one sector to another? In short is the industries plan implementable? This is undoubtedly the area where we stand on less sure ground, most of all because as mentioned earlier, there are major attitudinal changes which must come about. Perhaps today we are not fully ready for such a change but we are not planning for today. The demand growth for consumer goods in the immediate future in most cases can be met by the idle existing capacity supplemented by such marginal expansions of debottlenecking as the policy allows. It may be three or four years before all the new administrative and organisation structures like the District Industries Centres and the various field level organisations like the KVIC, SCSCs and the rural banks and cooperative credit and marketing societies begin to intermesh smoothly, so that they can meet the demand growth. Hopefully, our intelligentsia in all fields will begin to acquire a new orientation. One must begin some time and there is no better time than the present. To persistent sceptics of the industrial strategy one can only say firstly what other options do we have which meet the objectives we have set ourselves in the kind of time span available. Secondly, why are we so sure of failure? 25 years ago there were many who scoffed at our country's ability to build large power plants, complex chemical units, sophisticated defence equipment, launch satellites and generally develop the kind of technological capability that we set out to achieve. That was the direction the Plan wanted the country to take and consciously or otherwise we have paid a price for it. We are now preparing a change of direction to meet another set of objectives. May be we shall succeed in doing so in 10 years, may be we will take a bit longer but the job of planners is at least to point the country in the right way.

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Discussing the role of Agricultural Price policy in India, Shri Kahlon, Chairman, Agricultural Prices Commission, in this article, has advised moderation of short-run fluctuations while allowing prices to perform their long-run allocative function. He underlines the importance of further improvement of market efficiency by developing and strengthening an integrated structure of storage, transport processing and orderly marketing that would reduce physical losses to the minimum and maintain or improve nutritional quality of the produce.

IN RECENT YEARS, the agricultural production in India has shown a rising trend and the growth has even excelled the observed trends of production. In fact agricultural scenario has undergone a qualitative change, the trough production of 1974-75 was five per cent higher than the peak of 1967-68 and the latest trough production of 1976-77 was higher than the preceding peak of 1970-71 by three per cent. Faced with unfavourable weather and failure of the monsoon the country might experience another trough level production in 1979-80, but it would be premature to evaluate this year's performance relative to the previous peaks or troughs in production. At the same time, there is a serious shortage of pulses and oilseeds. Thus, the emerging situation is of excess supplies in some commodities and that of excess demand in some others. This has brought to the fore several issues which deserve close and careful consideration, particularly in the context of a positive price policy for Indian agriculture

Role of Positive Price Policy in Indian Agriculture

A S Kahlon

Objectives

The major objective of the agricultural price policy is to achieve price stability without destabilising total revenue of the farmer and provide a price support which would be economic to the grower as well as agro-based industry and at the same time subserve the interests of the consumer. In other words, the intention is to integrate support prices with policies to stabilise prices and supplies to consumers. One of the most striking features of the country's food management policy is not to allow every increase in support price to be reflected in consumer price, particularly in case of cereals. This is done by subsidising the public distribution system. It is, however, important that the bufferstocks are utilised not only as fire fighting operations to meet food shortages, but more so for development purposes, particularly when the excess supply situation at the present level of the purchasing power of the nation is reflected in more than 20 million tonnes of bufferstocks. The Food for Work Programme comes closest to serving as an important instrument for using food surplus to generate growth in employment and income

To be more specific, the short-term goal of price policy is stability in crop prices to create certainty, the medium-term goal emphasises stability in terms of trade for agriculture to encourage investment and the focus of long-term goal is on gradual adjustment of all prices towards their equilibrium level. Thus, the role of agricultural price policy is to moderate short-run fluctuations while allowing prices to perform their long-run allocative function.

The major problem today is to be able to maintain the tempo of production in a situation of costs. Perhaps the remedy lies in establishing high level management farms.

In the context of the situation of developing economics it is recognised that in bad harvest years, a decline in the marketable surplus is more than proportionate to the decline in production and faced with inelastic demand, change in price will presumably be more than proportionate to the change in production. Thus, when both demand and supply are inelastic, price stabilisation through a price support policy can bring revenue stabilisation, particularly when instability originates for the most part from the supply side.

A. S. Kahlon is Chairman, Agricultural Prices Commission, Ministry of Agriculture & Irrigation, Government of India.

At this stage of development, it is contained that the main objective of price support to Indian agriculture can be extended to embrace income orientation rather than limiting it to production orientation. However, considering that the price policy has a

The Evolution of a balanced and integrated price structure becomes complex when the yield-raising technology is available, for some crops and not for others.

supplementary role to play in achieving income goal, the remedial measures for bringing the balance in the relationship between prices received and the prices paid by the farmers has to be largely found outside the purview of the price policy via such measures as greater public investment in rural development, discrimination in the supply of inputs, credit, essential consumer goods and social services in favour of rural areas and small farmers, rural works projects and provision of strong market infrastructure.

Methods and Material

The most ideal solution to the determination of price policy is to resort to general equilibrium analysis where price is used as a vector to distinguish the response of aggregate production from responses in terms of substitution of most of the studies conducted, in India This approach attempts to correct supply-demand imbalances in specific commodities without introducing undesirable effect on the production of competing crops via the effect of relative prices on the acreage sown. But this approach has an operational problem and more so the data problem. That is perhaps the reason why substantial literature on agricultural price policy is dominated by the analysis of partial relation between relative agricultural price and production.

Till 1964, the agricultural price policy was more concerned with the stabilisation of consumer prices while ensuring minimum prices to the producer. It was in 1965 that Agricultural Prices Commission was set up with a view to evolving a balanced and integrated price structure in the perspective of overall needs of the economy and with due regard to the interest of the producer and the consumer.

The Agricultural Prices Commission does not follow a mechanical approach in deciding upon the price policy. While recommending a price policy for a commodity, the Commission takes a comprehensive over view of the entire structure of the economy of that commodity—its demand and supply situation, available data on cost of cultivation, export potential, price trends and the general economic health of the economy Besides, the Commission also takes into account the level of the administered prices for competing crops, so that a measure of inter-crop price parity is achieved. The inter-crop price parity criterion is based on the concept of balanced output supplies in relation to demand for them so that shortage or imbalances do not develop with reference to any major crop.

While recommending the price policy, the Commission also suggests such non-price measures as would facilitate the achievement of the objectives of the policy. In this regard, the Commission has been emphasising, inter alia, on the following :

(i) Establishment of agencies for implementation of declared price policies ;
(ii) extension of proven technology to areas where it still needs to be adopted ;
(iii) evolution of suitable technology for augmenting the production of crops still in short supply ;
(iv) regulation of markets and setting up new markets in areas where agricultural production has made sizeable improvement ;
(v) improvement in grading of agricultural produce and expansion of proper storage facilities ;
(vi) arrangements for timely and speedy transportation of agricultural commodities from surplus areas ;
(vii) buffer-stock operations to impart stability to domestic prices ;
(viii) utilising the medium of exports for domestic price stabilisation ;
(ix) fiscal measures including adjustments in excise duties ;
(x) development of appropriate technology for processing of agricultural produce ; and
(xi) improving the data base for formulation of price policy.

Operational Aspect

Recently, the Government of India have taken a decision that the price support policy for an agricultural commodity (crop) will be announced close to its sowing season so that the farmers could adjust acreage under different crops according to their relative profitability. This policy has its advantage in as much as it is easier to analyse the effect of a price change which occurs independently of change in the volume of production.

The major objective of agricultural price policy is to achieve price stability without destabilising total revenue of the farmer and provide a price support which would be economic to the grower as well as agro-based industry and at the same time subserve the interests of the consumers.

Faced with the shortage in most of the agricultural commodities in the past, simultaneous increase in production of all these commodities was difficut to achieve through adjustment in relative prices of different commodities. Now that the supply situation is more comfortable in case of many agricultural commodities and is less easy in some other, the role of relative price structure in agricultural adjustment process assumes greater significance. The changes in relative prices no doubt play a limited role in the context of traditional technology, but when used to supplement technological change in agriculture, price policy can speed up the growth of production significantly.

Recognising that the shortages are limited to few crops, such as pulses and oilseeds, it may be argued that the relative price can be moved to lift up the

production possibility curves of these crops. However, the evolution of a balanced and integrated price structure becomes complex when the yield-raising technology is available for some crops and not for others. The role of price policy in the case of such crops as pulses where suitable technology for improving productivity has yet to be evolved, "has been either too weak or even negative in some cases". According to this study, the price factor was almost overswamped by non-price factors such as technological changes in competing crops in influencing shifts in inter-crops acreages. This means that to induce growth through the instrument of prices, a disproportionate increase in prices has to be permitted, which may create more problems than it solves. As John Mellor points out, even if increase in production takes place (as a result of higher prices) it will be a movement along the production function, hence at increasing costs in resources. Thus, the growth of these crops has to be induced primarily through technological and institutional improvements. A positive price policy is necessary but not a sufficient condition It is the technological development which is the prime mover. In any case, the principle underlying the recommendations of the Agricultural Prices Commission has still been that the structure of relative minimum support prices of these commodities be adjusted in favour of these crops, vis-a-vis the competing crops. However, in case of such pulses and oilseeds, whose supply gap is rather large, their support price remains notional owing to high level of ruling market prices.

A policy of fixing only the minimum support prices for these commodities is not sufficient to induce the farmers to expand acreage and augment production of these crops. Following the experience of procurement purchase policies that have emerged in the case of wheat, rice and cotton, it would appear that there is an urgent need for the Government to take a policy decision to extend to these commodities suitable procurement|purchase policy. This will set the stage for the Agricultural Prices Commission to determine procurement|purchase prices for these commodities.

It is the surplus of good years and not the shortfall of bad years that forms the real problem of commercial production. During the recent years, wheat and rice production have expanded which does not mean that we expose the farmers to fluctuations in the market prices for these crops. In fact, there is a need to insulate ourselves from the large disturbances and uncertainties in wheat prices in the international market and continue to expand production of wheat and rice, particularly when the kharif cereals this year (1979-80) may fall below the targets owing to the unfavourable weather conditions.

A price stimulus in case of wheat and rice succeeded in raising production because technology existed to expand their production and it is understandable that the short-run losses in income that the increases entitled for the poor would be offset by the long-run gains from enlarged supply and long-run adjustment in prices. If the supply continues to build up over the years, this could be an economic signal to lower the support prices. Once production begins to rise rapidly on a sustained basis, support prices can be used to provide risk insurance primarily to counter variations in weather. The long-run role of support prices is to move towards the equilibrium as directed by the basic demand and supply forces. This policy will ensure continuing pressure towards efficiency in introduction of cost reducing technology and also lighten the otherwise rising burden of supporting agricultural prices.

It may be noted that inspite of some bright spots in the agricultural economy, a disquieting trend has emerged in the economy of the country. It is rapidly becoming a high cost economy. The cost of raising additional food is continuously rising even in those regions which have experienced a break-through in technology. So, the major problem today is to be able to maintain the tempo of production in a situation of rising costs. Perhaps the remedy lies in establishing high level management farms. In this context, the importance of management practices, in fact, the whole field of Farm Management assumes critical importance to be able to reduce the Unit cost of production.

State Advised Price Policy

It is sometimes contended that the prices of agricultural commodities should be fixed at a State Level rather than fixing one price for that crop for the country as a whole. The States where wheat yield is low and cost of production is higher than those which grow mostly irrigated wheat, might claim that wheat prices in those States should be fixed at a level which covers their cost of production of wheat and also provides a margin of profit. This approach is not tenable because even a positive price policy is not intended to encourage uneconomic cultivation of all crops in all the States and protect high cost inefficient producers.

In fact, cost of cultivation studies in the centre's Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops was purposively designed to study cost of cultivation of major crops of a State, so that each State could examine for itself where the comparative advantage of raising a more economic crop lies and effect redeployment of agricultural production accordingly. We realise that the farmers of an area might go more by inter-crop profitability conditions as they obtained in their areas rather than concerning themselves with the national needs of promoting more efficient and economic cultivation of selective crops in different parts of the country. But then the country cannot afford to perpetuate a wrong trend of each State trying to raise every crop, whatever may be the cost, much less subside it by raising the price support of an agricultural commodity on State level basis. Here it is not out of place to mention that State advised prices in case of sugarcane have resulted into a distortion of sugarcane prices-each State vying with the other to fix higher prices for cane. The result was obvious—imbalance in demand and supply situation in case of sugarcane, making it difficult for the States to dismount the tiger they were riding on.

Perhaps, the solution lies in setting up a food security system so that the States which have a comparative disadvantage in the production of a particular crop, can depend upon the efficiency of a security system to provide continuously adequate supply of agricultural commodities to meet their demand rather than continuing to raise more expensive pro-

duction. Food security system, for example, may induce Kerala not to continue producing rice, when it is so expensive for her to do so. It is, however, probable that each region will only feel food secure with the regional stockpile located within its own boundaries.

Market Structure

Effectiveness of a price support policy very largely depends upon the efficiency of the market structure. In fact, the expanded agricultural production, market and price policy present inter-related problems. The present system of providing price support by the public agencies to the grower, buffer stocking operations and the net-work of public distribution system (particularly in the case of foodgrains) designed to protect the interests of the consumer has indeed served a useful purpose. The fact, however, remains that seasonal bunching of procurement and the absence of a reasonable price differential in the post-harvest and off-season procurement prices makes the intra-seasonal price differential too narrow to induce the farmer to store his produce and market it in the off-season. Consequently, most of the produce is marketed in the immediate post-harvest period, thereby greatly straining the marketing system and making it difficult to eliminate some of the marketing mal-practices The solution lies atleast partly, in allowing the seasonal price to rise above the harvest price to cover storage cost and risks. In fact, incentives can be offered to the producer by way of meeting storage charges and interests which the public agencies may reimburse as and when grain is offered to them

To distribute the seasonal load of heavy market arrivals, the public agencies have opened many more primary marketing centres. To set up a balance between centralisation of produce in the main grain markets and decentralisation at the purchase centres, but this has only partly alleviated the situation. Since the large foodgrains markets still get swamped with heavy post-harvest arrivals, imperatives of the situation demand that public agencies set up mechanical cleaning, moisture measuring, (moisture-metres) processing and grading facilities for the farm produce at the market level. May be, before the technological break through came, particularly in the production of cereals, the size of the crop being small and intensity of cropping being low, the farmer had ample time to perform some of these services. Today, the farmer in agriculturally developed areas may find it difficult to perform these operations at the farm level, since time has become a critical constraint for him in the dynamic situation of multiple and relay cropping systems, where after harvesting the major kharif crop, he is left with very little time to market his crop and at the same time prepare the seed bed for the rabi crop. This means such facilities must be created at the market level. This is an illuminating illustration of the urgent need for integrating the marketing system to the changing production patterns in the country.

Finally, effective steps would need to be taken to further improve market efficiency by developing and strengthening an integrated structure of storage, transport, processing and orderly marketing that would reduce physical losses to the minimum and maintain or improve nutritional quality of the produce. Such an integrated structure would go a long way in assuring the farmer his due and enabling the price policy to discharge its allocative and regulative functions properly. □

Public Distribution Scheme Launched in Assam

R. N Bezbaruah

ALONG with the rest of the country Assam launched the public distribution scheme on 1st July, 1979. About 16,000 existing retail outlets are being used for ensuring availability of certain essential commodities to the people. In the rural areas alone there are about 12,000 retail outlets at present. However, the government proposes to open more such outlets wherever necessary

In urban areas, the distribution will continue against the family identity cards whereas the distribution in rural areas will be regulated through the lists of consumers attached with each retail outlet.

The public distribution system in Assam consists of 664 Panchayat level co-operative societies covering the entire rural areas in the plain districts. In urban areas 17 wholesale co-operatives with about 1,500 urban fair price shops in addition to about 130 urban co-operatives are looking after the distribution of essential commodities. In the two hill districts also there are 17 sub-area marketing societies with about 260 fair price shops and 84 co-operative societies. In areas where the State co-ops have not been able to open their retail outlets, the District and Sub-divisional authorities have been asked to approve retailers to take up the distribution responsibility.

The Public Distribution system in the State is already supplying, to the extent of availability, commodities like rice, wheat products, salt, mustard oil, controlled cloth etc. Other items like toilet and washing soap, match box, exercise books, cheaper varieties of cloth and tea are being added for distribution under this scheme. Efforts to ensure the distribution of these additional commodities throughout are being made by the State Government.

The launching of the scheme is a clear expression of the Government towards fulfilling the essential needs of common people at reasonable prices. The scheme, no doubt needs full cooperation and goodwill of the people for its successful implementation. The middle class people and the vulnerable sections of the society are very much hopeful about the benefit they are going to have. Railways in this respect have also a vital role to play for ensuring smooth supply of the consumers goods, most of which come from outside the State. □

R.N. Bezbaruah is our Sr Correspondent, Gauhati

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VERY FEW individuals have dedicated their lives to uplift the poor, to serve the sick and to transform the lives of the downtrodden. "Rama Rajya" would have been achieved, had every other citizen of India tried to emulate the few who staked their whole and soul in extending a helping hand to the needy persons in the country. Here amidst us are three such persons Sarla Devi, Muralidhar Devidas Amte and Jayant Shamrao Patil, who were honoured with Jamnalal Bajaj Awards 1979 for outstanding contribution in different fields of constructive work As Shri N. Sanjiva Reddy, President of India, said while giving away the awards, that the work of these people will inspire many young men and women to follow in their footsteps. There is no short cut to progress except through hard, sustained and disciplined work

They Dedicated Their Lives

R.R. Rao

Sarla Devi

Sarala Devi believes that emancipation of the lowliest of the low from political, economic and social thraldom is possible only through the adoption of Gandhiji's "Constructive Programme" in its totality She has thrown herself into the gigantic task of transforming Gandhiji's ideal of constructive programme action. Her selfless service to the mountain people particularly the women of Uttarkhand region of UP has been widely aclaimed. She rendered yeoman service in emancipating the downtrodden and women from their age old inhibitions, blind beliefs and handicaps and carving out a bright future for themselves

In 1946 Sarla Devi commenced her service to the women by establishing the Kasturba Mahila Uthan Mandal at Kausami This institution took upon itself to help the poor, ignorant, backward and oppressed women of Kumaon, Garhwal, and other mountain districts of UP. During these several years of selfless service, the institution has been able to create awarness of self-confidence in them making them self supporting and self reliant When she placed her thoughts before him and sought his blessings, Gandhiji advised her to remember that it was not good to take up a thing and fail She confidently told the Mahatma : "I shall know regarding success or failure after twenty years when my girls have faced the public with courage and won their own or else succumbed to the local social environment"

In fact she accepted the Father of the Nation as her friend, philospher and guide when his message of love and truth greatly attracted her in 1927. Miss Catherine Mary (her original name) rebelled against the order of society in Britain where she was born in 1901, not only because her personal family was affected profoundly by the First World War but she was appalled by the mass murders committed by man on man in the name of partition. Throwing to winds the respect for fellow beings, common men who were peaceful neighbours and friends became bitter enemies overnight with the declaration of war between their countries by kings and politicians in power, these she observed and experienced. Her father, a Swiss national was as much opposed to German Imperialism as any other British subject. But because of some legal misunderstanding on his nationality he was interned as an enemy national Members of the Hoilemann family suffered ostracism at the hands of their erstwhile friends This made her rebel against society as a whole—governments, cities and large scale industries which were the root cause of war. She spent much of her time wandering alone in fields and forests greatly agitated in mind and trying to find her identity. Right from her childhood she has been a humanist and giving great respect to human values. In wanderings she came across some Indian students, studying in Britain during 1927. They told her about Mahatma Gandhi and his teachings of truth, love and non-violence. The philosphy of truth propounded by the Father of Nation enthralled her and made her write to Bapuji seeking his permission to allow her join his crusade against the degrading values of humanity But Gandhiji perhaps to test her

R.R. Rao is our Assistant Editor

sincerity wrote to her advising "not to do anything so mad". She did not relent. Catherine started looking around for opportunities to visit India. At last in 1932 she reached India to serve as a teacher in a Udaipur educational institution which, she thought was being run in consonance with the ideals of Gandhiji. Soon she realised that the institution was not run on the lines of the Gujarat Vidyapith founded by Gandhiji, but was just another modern school manufacturing babus But her mission of coming to India was "to serve the poorest, loneliest and the lost".

Sarala Devi, as she was now known, was invited by Shri Jamnalal Bajaj to Wardha. Here she found work of her own liking suitable to her temperament and genius. She became a member of Aryanayakam's family and a colleague in his educational work of Sevagram. But climate frowned at her and her health deteriorated. So Gandhiji advised Sarala Devi to take rest completely for a year, regain health, understand people and the surroundings and then decide on future work". It was in 1941.

One year later a fine oportunity came her way to serve the people. "Quit India" movement was in full swing. All the workers of the Chanauda Ashram (Almora district) were arrested on false charges of arson and the Ashram was sealed. Sarala Devi decided to organise legal defence for the accused and render help to their families Despite stern warnings given by the officials she went about her work undaunted She herself suffered two terms of imprisonment for disobeying internment order. These conditions prevailed upto 1945

This period helped her a lot to choose her future work. She came into contact with a number of political workers and common people and understood the situation obtaining around her, after having prolonged discussions with other political sufferers She had been very much impressed by the simple hill folk of the region and realised that their women were industrious, though educationally, and socially backward. So Sarala Devi chalked out a plan to uplift these women folk and help them overcome their handicaps and carve out a brighter future for themselves Then with the blessings of Bapuji she established Kasturba Malila Uthan Mandal at Kausani.

Encouraged by the response, she started another institution, "Lakshmi Ashram" at Kausani The aim of this educational institution was to enable young girls face the life with courage and confidence. At Lakshmi Ashram, a residential basic school for girls, the students were taught through the crafts of agriculture, dairying, wool spinning and weaving. The school was deliberately made agriculture-based in order to discourage exodus of educated women from the villages to the cities which process denuded the villages of their talent. In due course the institution has developed from the primary to the post-basic stage It is self-supporting and self-reliant. Some of the students have married the local social workers and continued to work in the institution and others have gone out to take up social work in the villages on their own. Sarala Devi herself had been constantly moving from village to village on foot to spread the message of hope among women in these backward areas.

At Kausani, Sarala Devi organised a campaign to introduce prohibition in the mountain regions In this a large number of women actively participated and forced the Government to yield to their demand. Another campaign for the preservation of forests had been successfully organised by her.

Later she moved out from Kausani and started covering places particularly in MP, Bihar and Karnataka. During her course of travel for about 10 years she tried to propagate her views and launched an all-embracing mass education programme.

During the last three years, Sarala Devi overburdened by age (78) and suffering from acute asthma, has been confined to her home at Dharamghar village in Pithoragarh district.

Thus Sarala Devi not only believed but proved in real life that India of Gandhiji's dreams can be achieved only through the adoption of his constructive programme.

Baba Amte

Shri Muralidhar Devidas Amte, winner of the Jamnalal Bajaj Award 1979 jointly with Sarla Devi has been leading a crusade against suffering, ignorance and exploitation for the last 30 years.

Shri Muralidhar Devidas Amte, better known as Baba Amte was born on 26th December, 1914 in a rich landlord family at Hinganghat in Wardha district of Maharashtra. Even though he was brought up in luxury he had developed a sort of interest in the poor, the sick and the helpless. He took his law degree in 1938 and set up practice at Warora in Chanda district He became the leader of the scavengers' union in Warora and later Vice President of Warora Municipality When some scavengers said that he had no idea of the type of work and their working conditions, Baba Amte himself did for sometime the scavenger's work including carrying of night soil containers on the head to gain first hand experience of the job During this period, one rainy night, he was carrying night soil on his head when

he saw a bundle of old clothes on the roadside. But it was actually a person afflicted with leprosy severally mutilated by the disease and unable even to move. Very much moved by the plight of the leper, he put up a temporary shelter of bamboo thatching to protect the afflicted man. It was the turning point in the life of Baba Amte and the beginning of a series of institutions to rehabilitate lepers and make them stand on their own feet to eke out their own living. With the blessings of Mahatma Gandhi and Vinoba Bhave in 1951 he founded the Maharogi Sewa Samiti. Since then Shri Amte has created a large network of institutions for treatment, training and rehabilitation of leprosy affected persons. He has also devoted his energies to the service of the healthy blind children and the physically handicapped of all categories. Three years ago he launched an extensive and comprehensive health-agricultural awareness programme for the long-forgotten tribes in the remote Bhamragadh area of Chandrapur district. Shri Amte with his family has been living amidst leprosy patients since 1950.

The following are some of the institutions run by the Maharogi Sewa Samiti under his guidance.

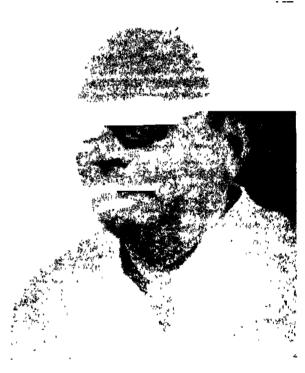
Anandwan—is the first project launched by Shri Amte for treatment, training and rehabilitation of leprosy patients and for conducting research in the field. Anandwan is situated on an extensive area, having a complex of indoor and outdoor hospital facilities for leprosy patients—about 1000 indoor and 1050 outdoor patients. There are workshops, farms, dairy and craft centres where work is provided for the inmates. The cottage industries' centre houses a number of training and production activities for leprosy patients. The emphasis here is on retaining human dignity by helping the individual to achieve as normal a life as possible. The patients unite to build accommodation needed in the centre without any help from outside contractor, workmen, architect, or engineer. They work in fields, gardens, orchards and cottage industries. At intervals, the marriages of patients are solemnised.

The children of leprosy patients also merit special protection against social discrimination. The Samiti is running four degree colleges with 1,400 students studying science, arts, commerce and agriculture and they are affiliated to Nagpur University and Punjabrao Krishi Vidyapeeth, Akola.

The needs of 70 blind children are met through a "Sunshine Home" that provides training in crafts and music. Sandhi Niketan trains 100 disabled and physically handicapped persons in various cottage industries and in agriculture. The training is adapted in such a manner as to overcome individual handicaps.

Somnath Prakalpa.—Established at Somnath on 1300 acres of land in the thickest forest of Chandrapur district in 1965 the project has been described as a workers' university. Intensive modern farming techniques are demonstrated for the benefit of landless labour and tribal communities Somnath is also the venue of national and international youth work camps

Ashokwan.—Situated on the outskirts of Nagpur city this project is a treatment-cum-rehabilitation centre for leprosy patients. The centre is entirelly managed and financed by about 100 leprosy patients and is completely self-sufficient.

Lok Biradari Prakalpa was started in 1972-73 in a backward trible tract, covering about 250 villages at the trijunction of the States of Maharashtra, Madhya Pradesh, and Andhra Pradesh. It is intended to provide a programme for health, agriculture and education of tribal groups living at the level of stone age man A school has been opened to provide non-formal education for trbial children and youth. Shri Baba Amte's son Dr. Prakash and his wife Dr. Mandakini are in charge of this project. They have set up a cottage hospital and along with several young volunteers serve as barefoot doctors in the jungle villages. Shri Baba has given succour relief and above all, self confidence literally to thousands of leprosy patients, physically handicapped persons and Adivasis from Maharashtra, Andhra Pradesh and Madhya Pradesh. Self-help and self-reliance have been the primary objectives of all activities of Shri Baba Amte. He has also been able to attract and enthuse thousands of young men with a missionary zeal to work in the service of leprosy patients, tribals and other down-trodden. A number of young men trained by him at Somnath are at present selflessly working for ending exploitation of Adivasis in Shahada taluka of Dhule district and else-where

Shri Jayant Shamrao Patil

Shri Jayant Shamrao Patil of Agricultural Institute, Kosbad Hill (Maharashtra) is the recipient of the Jamnalal Bajaj Award 1979 for doing pioneering research in the application of science and technology for rural development. The 52-year old Patil has spent his entire life working among and for the uplift of over six lakh Adivasis in the area. Born in a farmer's family Shri Patil received his early education in his native village under the guidance of the late Acharya Bhise, a Sarvodaya worker. Shri Jayant Shamrao Patil soon after receiving his B Sc. degree in Agriculture from the College of Agriculture, Pune, decided to dedicate his life for the uplift of the Adivasis in Thane district. He became a life member of the Gokhale Education Society and started his career as a teacher

in the Agricultural Institute, Kosabad Hill (Thane). Shri Patil was awarded the M.Sc. (Agriculture) degree of Pune University in 1960 for his research thesis on improving rice cultivation. He took the M.S. degree from Kansas State University (U.S.A.) in 1964.

All the research projects successfully undertaken by him to the service of the Advasis are based on the conditions prevailing in our country. Even though the poor, ignorant and illiterate landless adivasis live amidst abundant natural resources, they are ignorant of how to make best use of the nature's bounty. Shri Patil devised a simple cone-shaped surface well, 18 metres in diameter at the top and 5 metres in depth, to collect and use rain water for drinking as well as for agricultural purpose without depending upon the vagaries of the monsoon. The "kosbad type well" as it has come to be known, costs only Rs. 1200, does not require any cement, bricks and skilled labour. It not only is useful to store water, but also a source of manure as the silt, animal droppings and dry leaves carried by the rain water into the well form a deposit of natural manure at the bottom which can be reclaimed when the well is dry. On account of the multi-purpose utilities, the Government of Maharashtra has adopted the "Kosbad type well" and has constructed similar wells through Zilla Parishads, Panchayat Samities and Tribal Development Blocks.

In order to provide a rich green manure to enrich the soil, Shri Patil has introduced the cultivation of Glyrisidia, a legume which grows fast without any irrigation in rain-fed areas. To improve the quality and yield of rice, the main crop of this area, he has introduced new high-yielding varieties of rice and set up community rice nurseries for supplying seeds to the small and marginal farmers. Shri Patil demonstrated for the first time in 1966 that wheat could be grown in Thane district, and through his efforts the cultivation of wheat as a winter crop has now been widely adopted in the region. Another non-traditional crop introduced in this region by Shri Patil after extensive experimentation is cotton,which is now grown on a fairly wide scale as a Kharif crop in the districts of Thane, Kolaba and Ratnagiri.

Shri Patil has launched a project with the assistance of Tribal Development Blocks and aid from agencies like Oxfam (UK) for tapping the underground water resources by constructing wells and using electric or diesel pumping sets for irrigation particularly in summer. He has also evolved a three-crop pattern for growing rice, wheat, moong (green gram) and other pulses, vegetables and fruits round the year with the help of well irrigation. He has also organised the supply of inputs like seeds, fertilisers and pesticides through cooperatives.

As the traditionally grown grasses for fodder in the coastal districts of Maharashtra and Gujarat were poor in nutritive value, Shri Patil has introduced the legumes Stylosanthes (humilis, hamanta and scabra) from Australia for fodder. These legumes give a yield which is about 300 times more efficacious in protein content, compared to the local grasses. The animal husbandry and forest departments have taken up their cultivation on a large scale. Shri Patil has also undertaken a seed multiplication programme for distribution of seeds all over the country. It will have a long-term beneficial impact on the dairy industry by considerably reducing the costs of feeding the cattle with grain concentrates.

By setting up a Horticultural Seed Production Farm for research in horticulture and supplying seeds and seedlings and imparting training to the villagers, Shri Patil has helped to develop horticulture in the region and helped over ten thousand families during the last ten years to grow fruits and vegetables. He realised that the tribals are illiterates and decided to provide the means of education to the coming generations. He set up three Ashram Schools for boys and girls, for imparting education to them through subjects relevant to their lives such as growing vegetables, poultry keeping, fish culture and calf-rearing. A residential Secondary School was started in 1965. His wife Mrs. Meena Patil who holds a Master's degree in Sociology and Bachelor's degree in education is conducting this school which has presently a strength of 140 boys and girls from all over the district. The students and teachers of the school also take an active interest in community welfare by imparting education to the villagers in literacy and occupational training. The tribals have, thus, come to regard the school as an integral part of the community. Afforestation on a large scale is one of the projects taken up by Shri Patil through the students, which has now been adopted by other institutions in the State.

Under the auspices of the Indian Council of Agricultural Research Shri Patil has established the Krishi Vigyan Kendra at Kosbad Hill with the object of upgrading the skills of the tribals through 'Learning by Doing'.

Shri Patil has published several research papers in scientific journals as well as hudreds of articles in newspapers like 'Loksatta' 'Navshakti' and 'Gavkari' to popularise the results of his researches and to acquaint the public with the sustained efforts being made to bring about a socio-economic revolution in the backward areas.

The sum total of Shri Patil's endeavours during the last three decades has been to improve the socio-economic condition of the tribals who have been living a miserable life for centuries and providing them opportunities for education, work and self-employment. More than all, he has been able to instil a sense of self-reliance and self-respect among the Adivasis and to create the conditions which would enable them to provide the leadership from among their own ranks for helping themselves to improve their own lot and stand on an equal footing with the rest of the people in the years to come. He sees 'Antyodaya' in the service of the Adivasis. □

As soon as a man looks upon himself as a servant of society, earns for its sake, spends for its benefit, then purity enters into his earnings and there is ahimsa in his venture. Moreover, if men's minds turn towards this way of life, there will come about revolution in society, and that without any bitterness.

Mahatma Gandhi

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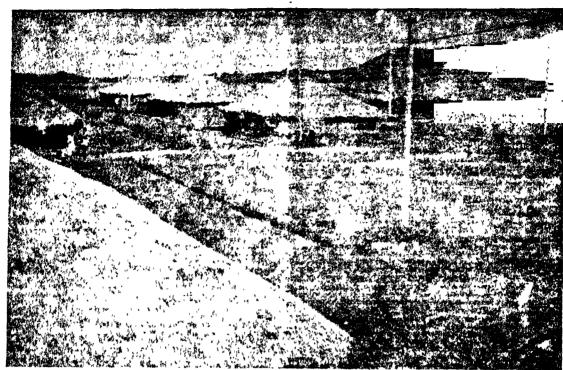
Pedubammidi Rural Housing Colony

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T HE GLITTERING face of a farmer beaming with a hearty smile, looking at his lush green fields happily dancing to the tune of mooing cows in the yards reflects the national development. The establishment of Sri Visakha Grameena bank has just achieved the same in the lives of small and marginal farmers, agricultural labourers, rural artisans and tribals of the Srikakulam, Visakhapatnam and Vizianagaram Districts of Andhra Pradesh. People in these districts rich in natural resources and tribal population, had been groaning under various problems which were largely the same all over rural India, such as lack of irrigation facilities, scarcity of credit for agricultural activities, unemployment or under-employment, insufficient educational institutions and so on. The Grameen Bank in coordination with other ongoing rural development projects made a frontal attack to remove poverty among the people living in these districts and brought about a sea-change in their very lives. The modus operandi of the Bank by introducing novel schemes like Gramodaya, Land colonisation, Rural housing programmes, and non formal adult education along with agricultural and allied programmes, is quite interesting and worth emulating by others.

Loans disbursed

During the last three years of its existence the bank has disbursed loans to 1,62,000 persons to an extent of Rs. 18.77 crore an dmobilised deposits of Rs. 7.64 crore from 1,27,000 depositors spread over 2200 villages. Within the short span of about three years the bank has spread its branches in over 80 villages.

Programme under agricultural sector

The Bank advances under agricultural term loans and allied activities cover a wide range such as Diarying, piggery, sheep rearing plough bullocks, cart and bullocks, wells pumpsets and energisation, land development, economic support to allottees, bee keeping, mechanised boats to fishermen, fishing material, gobar gas plants, sericulture etc. Agriculture is the mainstay of the people living in this area but the Bank has realised that this activity does not keep them engaged throughout the year. So the Bank's funds have been directed to finance not only their agricultural operations but also ancillary occupations such as dairying, piggery, sheep-rearing and so on, so that the problem of under-employment will be ameliorated to a great extent

The bank has extended agricultural credit to the tune of Rs. 4.28 crore to 33,700 small and marginal farmers and agricultural labourers for crop development. Advances to the extent of Rs. 40 lakh to minor irrigation schemes to dig wells, to purchase oil engines, pumpsets were made available to 1,000 beneficiaries. About 10,000 pairs of plough bullocks have been supplied to 10,000 farmers at a cost of Rs. 1.15 crore Under dairy development an amount of Rs. 1 4 crore was disbursed to 9,000 beneficiaries and Rs. 36 lakh for sheep rearing to 2,500 persons. Piggery development received an amount of Rs. 18 lakh. A centrally sponsored new scheme for upgrading the milch cattle 'cross-breed cattle' rearing has been taken up in the three districts.

Schemes under Non-agricultural sector

In tune with the emphasis being given by the Government to industrialise rural India, advances were made to rural artisans, small traders, to develop small scale industries. Retail traders have been given Rs. 3.5 crore loan and rural artisans like weavers, blacksmiths, cobblers, carpenters, potters, basket manufacturers, toddy tappers, an amount of Rs. one crore. Finances were also made available to small scale industries for development of rice mills, sugarcane crushers, bakeries, pickle industry, textiles, brick making, coir rope making, prinning and paper making industries.

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A. Ramakrishna Rao is A.I.R. correspondent, Waltair.

Banzar lands being given to the landless labourers and other weaker sections of the society lie as they were, uncultivated and undeveloped. Various reasons for this have been put forth the most important one being, lack of finances on the part of the allottee. So the bank has taken up land colonisation schemes for development of land assigned to the weaker sections. As a measure of experiment Kondamulgam village in Ranasthalam panchayat samithi has been selected for implementing the scheme. The area full of bushes and thorns has now been turned into a lush green field. About fifty persons belonging to scheduled castes and backward classes who were assigned such lands have been helped to develop the same by procuring agricultural implements, plough-bullocks, digging irrigation wells under the scheme. Loan of Rs. three lakh was made available to them initially. Encouraged by the tremendous enthusiasm and success, the scheme is now being extended to another three villages.

Rural Housing Programme

To help the rural masses a massive housing programme was initiated in the three districts, by the district authorities. The bank has provided finances in majority of such colonies constructed by the district authorities to ameliorate the stupendous rural housing problem. Also in Srikakulam district the bank has taken up a scheme for participation in construction of housing colonies. The government with the bank's financial assistance has taken up construction of houses to land assignees as a part of the food for work programme. The first such scheme launched at Gaddeyyapeta village in Narasannapet panchayat samithi has proved to be a great success and so the bank has taken up the construction of 14 such colonies in the Srikakulam district.

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A new scheme for an alround development of villag with the bank's full financial assistance by adoptin the village was initiated in Sirikipalem village nea Allamanda in Visakhpatnam district. (At presen vizianagaram district.) The bank has extended help i getting electricity to the village, in the construction o school building, and in digging community well fo drinking water. The normal banking activities lik advances to minor irrigation, land development etc were extended in a massive way in the village. It ha mobilised the villagers for the village developmen schemes by initiating the collective responsibility Several harijans of the village have taken oath t abstain from drinking. The two rival factions in th village are now working unitedly for the developmen of their own village. The scheme is now being extende to other villages also.

Non-formal Adult Education

With the assistance of the department of Adult and Continuing Education of Andhra University, Waltair the bank has started on 15 August 1979, Non-forma Adult Education Centres in Budithi (Srikakulam district) Sirikipalem and Haripalem in Visakhapatnam district. The branch managers of the above villages have voluntarily taken up this work. Slates, books teaching material were distributed to the participants from the contributions made by the bank staff.

Tribal Development Schemes

As already stated the area under the jurisdiction of the Bank has a majority of tribal population. So to emancipate these backward people from their penury and poverty on account of age old methods of cultivation and way of living, the Bank has launched an ambitious plan.

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Milch Cattle distribution under Economic Support Programme

Struggling for a Habitat

Review Article

S M. Shah

THE UN CONFERENCE on habitat 1976 held at Vancouver, Canada focussed attention of member-countries on creating a proper habitat for their populations. Several countries have since formulated policies for organising proper human settlements.

Human settlements, both urban and rural, are centres of resource generation, distribution and consumption. The symbiotic relationship between these two types of settlements need strengthening in order to ensure a better quality of life for their populations.

The 1976 UN Conference at Vancouver laid down the following two important desirable objectives: (a) minimisation of the existing differentials in the standard of living and services between rural and urban settlements and (b) minimising the process of migration by establishing better linkages between rural and urban areas and by developing service centres and growth centres to provide adequate distribution of goods and services.

Habitat is environment in which man—who is also a part in it, as an individual and as part of a group can survive and grow physically and culturally. As a concept, the habitat concept is borrowed from the biological sciences where it means a physical environment which is conducive to the growth and multiplication of a particular living organism or species. Such a broad concept should necessarily relate to the concept or quality of life. Habitat then has three aspects: (i) the natural environment and the ecological system in which it could provide for the support of life; (ii) the technological artefacts which are used to draw benefits from the natural environment to satisfy man's needs and (iii) man and his social organisations which manage to use the natural environment in order to satisfy the material needs, including the direct consumption of natural goods.

Human Settlements

The United Nations considers human settlements basically as ecosystems composed of natural and man made elements which interact in complex ways within their environmental dimensions Human settlements are thus units of human organisations. The basic unit is man and his household C. A Doxiadis maintained that human settlements comprise not only nature, shells and networks (physical environment) but also of society and man. The Habitat 1976 Conference emphasised the need for creating more durable, attractive and efficient human settlements. It underscored the need for recognising by member-countries the special requirements of the disadvantaged groups to ensure to them the provision of health, education, food and employment.

S M Shah is Joint Secretary, Programme Evaluation Organisation, Planning Commission

The International Institute for Environment and Development (IIED) commissioned a few studies in major developing regions: Latin America, Africa South of Sahara, Asia and the Arab world. The work relating to Asia was entrusted to the Institute of Development Studies, Mysore under the directorship of Professor R P. Misra. **Habitat Asia: Issues and Responses,** is in response to this request. Misra devotes volume I to India, volume II to Indonesia and Philippines and volume III to Japan and Singapore and analyses how these governments are struggling to evolve proper habitat policies as part of their national development effort This paper reviews Misra's effort and at the same time apprises the readers about the different programmes being followed by these countries in the field of human settlements.

The human settlement system in India consists of three major types: urban, rural and tribal. Tribal settlements are further subdivided into sedentary, semi-sedentary and nomadic There are rural areas showing social indices of urban population. There are pockets in metropolitan cities showing rural characteristics also. Urban growth in India is faster than the population growth whereas the number of towns is almost stagnant. This causes city congestions. Misra brings out very pointedly the spatial imbalances in development and population distribution

Discussing the lopsideness of urban hierarchy, Misra holds that urban places are mostly the products of the expansion of capitalistic economy. The urban concentration, high accentuation of economic activity as well as the low capacity of the towns to expand economically has serious employment implications. A drought in the village drives men like Siddiah in cities where he works as a daily wage earner, usually in the urban informal sector. He may never return to his home village and ultimately land himself into a slum or a squatter settlement. Society has failed to create an adequate habitat, an environment in which he and his family can live and grow healthy. They all are struggling for marginal existence for employment and for shelter.

The incapacity of cities to absorb the impact of growth is most evident in the squalor of poor housing, inadequate basic amenities and slums. Transportation turns out to be a nightmare in all large cities. Among certain basic amenities, only 38 per cent of the urban population had access to water borne sewerage system, and 36 per cent had drainage. According to a survey made by the National Building Organisation (1975), 12 7 per cent of urban houses are kutcha and 23.5 per cent are semi-pucca structures. Situation is no better in respect of village settlements. About half the total number of villages have no pucca houses at all which are durable. Only 4 3 per cent of village population

had access to protected piped water supply. Only 40 per cent of rural populations have access to electricity as compared to 86 per cent in the urban areas.

Habitat Condition in India

Misra presents a variety of rural and urban habitat conditions in different parts in India. His illustrations cover the cities of Madras, Ahmedabad, Bela Pratapgarh town in Uttar Pradesh, Jagannathprasad village in Orissa, Taki Lalung, a tribal village in Arunachal Pradesh and settlements in central Kerala Compared to other parts of rural India, Kerala's human settlement situation is better in terms of shelter and basic facilities. Innovations diffuse more quickly in Kerala through the rural-urban knots, many of which have services like banks, shopping markets, service industries, places of higher education etc. Sixty per cent of houses in Kerala villages have fairly durable walls of bricks, sun-dried bricks or cut stone. Jagannathprasad village of 1190 souls, 20 km from Bhubaneswar, had hardly any trickling down effect of development on the surrounding rural settlements. Ninety per cent of houses in this village were made of bamboo, mud, grass or straw. A major problem everywhere is the access to services like schools, hospitals, clinics, post offices, credit facilities, shopping centres etc.

India has launched her Five Year Plans. But Misra observes that neither before nor after the Vancouver Conference has India announced a comprehensive human settlement policy. Nevertheless, in 1975 the Town & Country Planning Organisation prepared a National Urbanisation Policy Resolution which was later approved by the Housing Ministers Conference held in Bhopal. The Resolution sought to arrest the further growth of metropolitan cities, achieve optimum distribution of populations between rural and urban settlements and generate growth in medium and small size towns through establishment of a hierarchy of growth centres. This is further reflected in the Draft Sixth Plan 1978-83 providing outlays for the development of small and medium towns.

The Government of India has now established a National Commission for the Environment which has issued guidelines for major projects that will, it is hoped, ensure due protection of the environment.

Misra examines in all the three volumes important issues in human settlement policies. These are urban and rural settlements and their organisation, land resources and their management, shelter, infrastructure and services, problems of industrial cities, fluctuations in land prices, resources and technology, administrative structure, management institutions and public participation and national settlement policies. He discusses these in relation to Indonesia and Philippines in volume II.

In Indonesia

Indonesia is an archipelago with more than 13000 islands posing great problems of human settlements Its economy like India's is dualistic with 80 per cent of her population engaged in agriculture. About 5 per cent of the rest is in trade, 10 per cent in industrial sector and the remainder in small holder settlements engaged in export products. Only 17.4 per cent of Indonesia's population is urban. The urban areas have expanded at the cost of fertile agricultural lands surrounding them The poor and the jobless in the rural areas flock to major towns in search of food and work These cities are without proper urban facilities—only 40 per cent in respect of water supply is met. There is a lack of sanitary facilities and garbage disposal—only 12 per cent of the population in Java and Madura cities have lavatories.

The basic philosophy of the Spice Islands is that the village is the centre of the growth of its national policy, culture and economy. The concept of regional planning is accepted and it is proposed to create growth around the big cities based on a comprehensive pattern of spatial and regional planning. To improve urban environment it is also proposed to undertake the construction activity in a big way through housing development. Site and Services programme and low-cost housing for the low and moderate income group is also proposed. The Government is also wanting better distribution of the urban facilities to small and medium sized towns.

The important programme followed by the Indonesian Government is promoting a transmigration programme according to the Transmigration Act, 1975 This Act translates Indonesia's habitat policy in action and has the following goals : (a) raising the standard of living, (b) regional development, (c) balanced population distribution, (d) spreading development activities throughout; (e) utilisation of natural resources and manpower and (f) national integration. The Transmigration policy envisages to settle populations from surplus areas in regions which are at present underpopulated and underdeveloped. The transmigrants are given 2 hectares of irrigated farms or fields or 4 to 5 hectares of non-irrigated agricultural land per family. Social village committees are formed to stimulate the programme of transmigration on the basis of cooperative mutual aid and self-help spirit.

The Government is also giving attention to the improvement of rural environment. Village modernising programmes are launched to improve housing, health and public amenities. Financial aid is given to municipalities to upgrade local infrastructure. Fishermen's settlements are being developed to promote concentrated dwelling places and to provide these settlements with housing, potable water, production means and protection of estuaries. Environmental pollution control in human settlements is also emphasised. The Indonesian Government has set up a Commission on Human Settlement but the activities of this Commission are directed more towards physical planning than social and economic aspects. The National Urban Development Corporation oversees the sites and services programme. A noteworthy feature in respect of promoting community health is the establishment of mother and child welfare centres. 'Puskesmas' such that every sub-district has at least one such clinic or child welfare centre

In Philippines

Major concern in Philippines is the uneven distribution of population among its regions. Its urban population is growing at the rate of 4 to 5 per cent as compared to the general population growth of 3 per cent per year. One out of every three Filipinos lives in an urban area. But all these urban areas do not have urban characteristics. A place is called an urban area if it is a chartered city or a municipality with a population density of at least 1000 persons per sq. km. regardless of its population size and if it meets a certain criteria regarding infrastructure. The scatteredness of the rural population is posing serious problems with regard to the delivery of public services. These rural

populations are scattered in tiny settlements and consist of farm house types in the low lands, floating housing settlements in fishing villages and frontier settlement in the mountains and forests. As much as 44 per cent of the total geographical area of the country is covered by forests.

Rural urban income differences are wide with an average of 2818 Pesos in rural and 5967 Pesos in urban areas. Housing and infrastructure development are in a bad condition in most places, urban as well as rural. Nevertheless, with free primary education in the country, most Filipinos (83.4 per cent) are literate.

The Government of Philippines organised a National Conference on Human Settlement in March 1976 Since then habitat and settlement planning is accepted as public policy. In May 1976, the President appointed a Human Settlement Commission. The week March 7-12 is celebrated as Human Settlement Week.

The official policy on Human Settlements declares (a) to liberate human communities, from blight, congestion, and hazard and to promote their development and modernization; (b) to bring about the optimum use of land as a national resource for public welfare; (c) to effect the rational interdependence of communities both within as well as amongst the various regions, (d) to preserve and promote a dynamic balance between the physical beauty of the land and waters on the one hand and the handiwork of human technology on the other, and finally; (e) to realise their policies through the human settlements approach.

In action, this Policy follows a two-pronged strategy: a controlled development of metro Manila and the simultaneous development of selected areas throughout the country. Decentralised concentration through growth centres is sought to be achieved. Already a total of 346 settlements have been identified as metropolitan centres, regional centres, sub-regional centres and major urban centres. A phased development of these centres is being undertaken.

According to Five Year Development Plan 1978-82, each housing settlement will have the supportive facilities necessary to ensure its self-sufficiency. Among these are access to electric power, potable water supply, a sanitary toilet, health centres, educational facilities and other community facilities; and proximity to sites of income generating activities.

The Philippine Government has established in 1977 an Environment Protection Council with a mandate to curb the sources of pollution. In addition, the Government now requires an environmental impact statement before public and privately financed projects are approved This applies to dams, roads and power stations.

Japan's Settlements

Japan's population is unevenly distributed among eight regions and 47 prefectures. Population trend in recent years indicates increasing concentrations in the large cities where development of industries has been phenomenal. The three metropolitan regions of Tokyo, Osaka and Nagova together claim 40.8 per cent of Japan's total population.

Of Japan's total number of 3203 settlements (cities, towns and villages) 1094 are facing the problem of 'de-population' on account of migration of people towards metropolitan and urban regions in search of jobs and other opportunities. On account of resulting low density, it becomes difficult to maintain basic community services such as public safety, education and medical care in the rural areas.

Japan enacted in 1950 Comprehensive National Land Development Law which stipulated that the National Land Development Plan be formulated at each of the hierarchial levels . national, regional and prefectural and 'specific' areas such as natural disaster prone places. The First Comprehensive National Land Development Plan 1962 divided the country into three areas : (1) over-concentrated areas (large metropolitan areas); (2) adjustment areas (those surrounding over-concentrated areas); and (3) development areas (under-developed north-east, the Japan sea coast and southern-most areas). In 1963, fifteen areas were designated as 'new industrial cities' primarily in the development areas, six 'special industrial improvement areas' in the adjustment area and more than 100 small scale industrial areas in the development areas. The Second Comprehensive National Development Plan 1969 was designed to create a better environment for the people with the goal of fully developed welfare society. Citizens' concern led in 1971 to the establishment of the Environment Agency at the Central Government level. The Third Comprehensive National Development Plan 1977 adopted its basic objective as "to systematically regularise a general environment for secure, healthy and civilised human life" The New Plan envisages population diffusion and relocation of educational, cultural, medical and industrial centres by dividing the nation into some 2000 to 3000 'habitat circles' alongside certain water systems rather than around traffic centres. This is a significant departure from the earlier policy followed in the mid-sixties of development through 'growth poles' to enable the development of large scale industries. Thus, there is a clear shift from the policy of growth to the policy of improvement in the quality of life.

Matchless Singapore

Singapore is a small compact country of 587.6 sq. kms. It has a population of 2.27 million with an annual growth rate of 1.2 per cent. Nearly 80 per cent of Singapore's population lives in the main city; the rest is distributed in the rural community centres and the recently created new towns Singapore's prosperity is almost wholly dependent on foreign trade and hence there is a sense of urgency in the provision of infrastructure facilities to assist industrialisation, the more efficient use of land for agriculture and urban development.

The economic growth of Singapore has been accompanied by an all round improvement in the quality of health services, level of nutrition and standard of education. Perhaps, no other country in the world can match Singapore in the provision of shelter and related facilities. Nearly 52 per cent of the nation's population lives in flats and houses built by the Housing and Development Board. Public housing alone accounts for as much as 79 per cent of the total development expenditure. Nearly three-fourths of Singapore's population is served with modern water borne sanitation. Ninetyone per cent of houses in Singapore have water supply; 54 per cent have bathing facilities and 100 per cent of households have access to electricity. The metro-centre and the rural settlements almost resemble each other in urban type amenities.

In its policy of creating proper human settlements, new towns are planned with reallocation and redistribution of population aimed at keeping the environment of the country clean. Three such new towns have already been constructed and six more are under various stages of construction. These new towns are designed to contain 30 to 40 thousand dwelling units for an estimated population size of around 1 5 to 2 lakh persons and covering an area of between 300 to 600 hectares each. These new towns are provided with modern sanitation, electricity, gas and potable water. Social amenities such as creches, community centres, schools, out-patient clinics, child health and maternity clinics, markets, shops, post offices and police stations have also been provided. The rural centres cover an area of 3 4 hectares each.

It will be thus seen that the public sector has gone a long way in controlling the construction and protecting the environment of the country About half of the total area in Singapore is owned by the Government and statutory boards like public utilities, housing and city corporations.

Misra and his team has made a useful contribution in focusing the attention of the concerned governments on the very important problem of human settlements. Mahatma Gandhi also had emphasised long ago to make both our urban and rural settlements liveable and efficient It is hoped that this will spur them into action in many directions. ☐

Habitat Asia : Issues and Responses; General Editor—R. P. Misra; Vol. I India—pp. 288, Vol. II Indonesia and Philippines—pp. 188 and Vol. III—Japan—pp. 192; Concept Publishing Company, New Delhi, 1979; Price Rs. 200 per set.

Rotational Water Distribution

A Case Study of Mahi-Kadana Project

T. K. Jayaraman

IN THE MIDST OF bewildering scarcity of natural resources and of challenging twin objectives of rural development, namely, income creation and distributive justice, rotational water distribution has come to be looked upon as an important tool for promoting access for all weaker sections to a vital factor of agricultural development. Rotational Water Distribution (RWD) is a unique instrument to raise productivity per unit of water through ensuring an equal amount of water per hectare for all farmers below the outlet level regardless of their economic and social or spatial differences.

Principles and Practices

RWD system is considered primarily for the Rabi season since there is no precipitation and the cultivators have to depend upon only surface irrigation. In *Kharif* season, when the monsoon fails or is erratic, surface irrigation assumes importance. In order to protect crops like paddy, which are far more water-intensive, branches, minors and sub-minors are to be operated on a rotational basis. Apart from this, no attempt is made to introduce RWD at farm level in the kharif.

In the *Rabi*, there may be three levels of rotation. The first is the rotation of the outlets along a continuous flowing minor and each outlet is opened once a week for a specific time. This is under the assumption that crops grown in the outlet area require a weekly rotation of water. Crops like wheat may require a fortnight and tobacco may require a three-weeks rotation. But, it is seen that farmers find it convenient if water is delivered on the same day of the week. For those crops requiring longer intervals, rotation can be done in multiples of one week.

The second level of rotation is the one between the farmers below the outlet. The third level of rotation is within the sub-groups of farmers among the group below the outlet.

T. K. Jayaraman is Area Development Commissioner, Mahi-Kadana Irrigation Project, Ahmedabad. Views expressed are his Personal.

Before introducing Rotational Water Distribution (RWD) one has to ensure farmers' acceptance of the programme. This is for the reason that autonomous decisions howsoever good and made by the Governmental agency in the interests of the clientle farmers are always suspected in their eyes. A good deal of propagation of the concept is required so that confidence is established in the minds of the farmers.

Secondly, irrigation department which will be the chief agency to operate the RWD, has to restore the canal system to good condition. Some preliminary construction work may also be required and this would consist of flow regulators in minors. Below the outlet level, the field channels, whose maintenance is the responsibility of the cultivators, are to be cleared of weed and silt and the flow regulators have to be kept in good condition. Distribution boxes and drop structures in field channels may either have to be repaired or replaced.

Rotational Water Distribution is a unique instrument to raise productivity per unit of water through ensuring an equal amount of water per hectare for all farmers below the outlet level regardless of their economic and social or spatial differences. In this article T. K. Jayaraman explains how this system was successfully implemented on an experimental basis in Mahi-Kadana project in Gujarat State.

It is also found advisable to install measuring devices so as to assure ourselves whether water at the outlet is of one cusec or less. Experience has also proved the usefulness of lining the first 10 to 15 meters of the channel.

The expenditures above the outlet do not normally pose a problem from the point of view of financial sanctions since they come under the description of maintenance expenditure. But in regard to expenditure below the outlevel what is proposed amounts to maintenance which is the responsibility of the cultivators. Apart from replacement of division boxes or inlets which have been damaged, there are some new investments such as installation of measuring devices and initial lining.

In addition to the above expenditures for keeping the system both above and below the outlet level, some expenditure on additional staff may also be necessary. The additional staff is chiefly for irrigation operations such as canal inspectors and chowkidars to operate the minors and to release water from outlets at fixed time.

The operation of the schemes upto the outlet level thus clearly rests with the irrigation department. But, below the outlevel farmers are to be involved. Initially the working hours and days are worked out and details regarding day, time, survey number with area and names of the cultivators are displayed on the board fixed at the outlet and sub-groups are also indicated. Though there will be no freedom to change the schedule within the outlet as a whole, the farmers within the sub-groups have freedom to adjust among themselves, depending upon their convenience. This freedom is necessary since night and day irrigation are best observed if left to the cultivators themselves rather than through official pressures The members of sub group would constitute a committee with 100 per cent membership with an elected chairman. All the sub-group chairmen at the outlet level would form the group committee, the membership not exceeding three or four. They would elect a chairman from themselves. At the minor level, there will be a federating committee composed of all outlet group chairmen. Agricultural officers would be coopted as members of these committees at the appropriate level to bring home the message of extension in the area of improved soil and water management practices.

Since quantities of water per hectare and time are to be fixed as per the availability of water, it is also proposed to do away with differential irrigation rates now based on crops. A flat rate would be revised on per hectare and time basis and it is payable whether the cultivator grows crops using irrigation supplies or not. He may go in for more water intensive crops relying upon his own individual efforts such as well or he may buy water time from his neighbour growing relatively less water intensive crops or another neighbour who might have kept his land fallow but still has to pay the flat rate. Thus water will be for the first time considered as a saleable economic good instead of the current practice of non-transactional "free" good.

Warabandhi in Mahi-Kadana

RWD system was introduced purely on an experimental basis in Rawalpura Sub-minor in the Mahi-Kadana Command Area in Gujarat State in the *Rabi* of 1978-79. The objectives were limited · (a) to ensure each farmer obtaining equal share of the available water volume per acre based on allotted time to his field and (b) to ensure that losses accruing in the field channels are shared equally among the farmers. The procedure was also restricted Though days (no nights) were fixed for sub-groups for water rotation in a given outlet, no time schedule was laid down. Secondly no committees were formed either at the sub-group level or at the outlet group level. It was in a way an official programme but there was a substantial two-way communication between the CAD authority and the cultivators. Thus, the entire operation was made informal without organisational arrangements. Sub-groups, groups and days for RWD were arranged after informal consultation with the cultivators.

The cultivators followed the procedure of application before the season and the existing rate structure was adhered to. No flat rate was effected and thus no departure whatsoever from the current system was made.

Before the experimental RWD was introduced, repairs to sub-minors were effected; additional outlets were provided and field channels were restored to good condition. Details of expenditure are given below :—

Expenditure Details on Rawalapura Sub-minor

CCA (Acres)	On providing additional outlets	For new C.D. works	Repairs to canals	Repairs to Field Channels	Total Expenditure	Per hectare expenditure
510	5954	3000	4507	9984	23445	46.00

Despite the variations from the rigorous norms of RWD, results purely in terms of total area irrigated are impressive as illustrated in the table below :

Areas Before and After RWD in Rawalapura Sub-minor

Item	Before RWD 1977-78 (Rabi)	After RWD 1978-79 (Rabi)	Increase in percentage
Number of Irrigators	290	321	10 6
Total Acres Irrigated	388	427	10.1
Wheat	241	273	
Tobacco	101	108	
Vegetables	46	46	
Additional Acres Irrigated	..	28	..
Due to lift irrigation	.	16	..
Due to water course Extension	..	12	..

Due to RWD, tail enders who were not getting water earlier, were getting water and those who did not apply in the previous year for irrigation were encouraged to apply since assurance was given to them. Thus the aggregate area irrigated went up by 10.1 per cent. Lift irrigation and extension of water course brought fresh area under irrigation amounting to 28 acres.

Apart from acreage response to RWD, yield response is also worth studying. An evaluation is being undertaken of the profitability of irrigated farming under more assured conditions of irrigation thanks to RWD. A comparative input-output analysis has also been taken up for the two periods before and after introduction of RWD.

Thus a preliminary study would indicate three-fold economic gains arising out of the experimental *warabandhi.*

(a) increase in the irrigated area under the outlet due to assured pattern of distribution.

(b) increase in the profitability of production through increased application of inputs such as HVY seeds, fertilizers under certain conditions of irrigation and

(c) increase in area of irrigation outside the original command area due to saving in water through water course extension and lift irrigation.

An evaluation of operational aspects would reveal that RWD on a more rigorous footing should have the following components :

(a) Water should be distributed on per acre-hour basis. Water hours per acre should be worked in consultation with agronomists and based on regional research studies on crop *water requirements*.

(b) For each sub-group within the outlet, total time of distribution of water should be fixed on area basis making allowances for line losses and time for each *khatedar* be allotted.

(c) Time and day allotted should be displayed on a board at each outlet with appropriate colours so that illiterate farmers can also make out from the Board as to their day. However, within each sub-group internal adjustments can be made by cultivators.

(d) Cultivators in each sub-group should elect a sub-group leader who would form outlet committee for solving their difficulties.

(e) Application forms for irrigation should be sanctioned on a long term basis instead of the current practice of seasonal application and sanction. Alternatively, a flat rate may be introduced in *warabandhi* areas alone, whether the farmers take water or not.

(f) In the event of insufficiency of water in the reservoir, the engineers should inform the cultivators at the beginning of the season and water distribution twice should be proportionately adjusted.

(g) Division boxes for each sub-group should be painted with different colours according to days of the week □

TRAINING IN EVALUATION

THE COMMITTEE FOR TRAINING IN EVALUATION set up by the Government of India under the Chairmanship of Shri S S Puri, Secretary Planning Commission has submitted its report to the Planning Commission.

The Committee was assigned among other things, to assess the training needs of the personnel for manning the State and National Evaluation Organisations, to review the existing training arrangements in evaluation methodology, to suggest methods and techniques of training in relation to the courses and to identify suitable agencies for conducting various courses. Some of the important recommendations made by the Commitee are as follows :—

The evaluation personnel have been broadly categorised, for the purpose of organising the training programme, into three levels—the Senior Level (Director/Additional Director/Joint Director/Deputy Adviser/Project Director), the Supervisory level (Deputy Director/Senior Research Officer/Assistant Director/Research Officer/Evaluation Officer), and the Junior level (Investigator/Technical/Research/Field/ Statistical Assistant/Junior Statistical Supervisor/Analyst/ Computor)

The number of evaluation personnel engaged both in the Central Programme Evalution Organisation and the State evaluation organisations comes to 868. This consists of Senior level (23), Supervisory level (211), and Junior level (634).

Training facilities for evaluation personnel are lacking in almost all the States Union Territories There is a need to organise systematic training for the evaluaion personnel and to tailor the training programmes to suit the requirement of evaluation work.

There is scope for improving the quality, timeliness, and follow-up action of the reports completed by the various State evaluation organisations. Training would go a long way in improving the quality of these evaluation reports.

The training of the Senior and the Supervisory level personnel should be the direct responsibility of the Central Programme Evaluation Organisation. For training the Junior level evalution personnel also, the Central Programme Evaluation Organisation should take up the responsibility of coordinating the training activities with the State evaluation organisations. The State evaluation organisations may take the necessary guidance and support from the Central Programme Evaluation Organisation in organising and planning the courses.

The Regional Workshops of Evaluation should be a continuous feature to train Senior level personnel. The syllabus for this category of personnel should include conceptual/theoretical lectures besides discussion on the design, methodology, and findings of the selected evaluation reports of the Central Programme Evaluation Organisation and the participating State evaluation organisations. Emphasis should also be laid on the development of an evaluation design by each participant, on the topic likely to be taken up by him/his organisation for evaluation, in the second round of Workshop Five such Regional Workshops per year should be organised, each for a duration of eight days

The syllabus for the Supervisory level evaluation personnel adopted by the Committee envisages the course contents of four weeks' duration. The course contents mainly include theoretical and conceptual lectures, designing of an evaluation study, data collection and report writing. Three such courses should be organised per year.

For the training of Junior Level evaluation personnel, the Central programme evaluation organisation should be responsible for coordinating the training activities with the State evaluation organisations The State evaluation organisations, however, may take the necessary guidance and support from the Central Programme Evaluation Organisation. The course contents of four weeks duration has both theoretical and practical inputs. Five courses be organised per year to cover the entire number of Junior level personnel in the next five years.

Industrial and Technological Dimensions

(Contd from Page 7)

Two important issues which, have not been adequately dealt with in the Draft Plan are conservation and energy.

Conservation and Energy

Conservation does not mean the narrow view point of conserving minerals and fossil fuels which do find some place in the Plan document but more, the larger aspects of conserving the total eco-system, our water, our land, our forests and our air. While the chapter on Environment does deal with these matters, these concepts will have to be given concrete legislative and regulatory teeth if they are to be translated into reality. This will certainly have a direct bearing on the costs and location of industry and choice of technology Already, for instance, we are finding that there are conflicts, between water for irrigation and water for thermal power stations, between preserving forests, flora and fauna required for maintaining the ecological balance and the siting of hydel stations and mining projects. Several developed countries want to set up chemical plants in India and in the developing world because they find that pollution laws in their own country are making it prohibitively costly to produce there.

A second and even more profound impact on industrial and technological choices will arise out of the energy demands of modern industry including its transportation system. Industrial systems in the developed world are becoming increasingly intensive in consuming energy, largely fossil energy, and especially power the most capital intensive and expensive of all energy sources.

The average energy requirement of a citizen of the USA per annum is approximately 20 times that of a citizen of India. It is also to be noted that about half the energy in India is contributed by dung and firewood, the latter a rapidly depleting resource. It needs no great exercise in futurology to project what any attempt to follow the western world in their industrial technology and life style would imply for India. Unless we make unexpected discoveries of oil on a scale far exceeding anything we have done so far, we may have neither the rupee resources nor the foreign exchange to import even the fuels that such a path of industrialisation will lead to

We do indeed have large resources of coal and some untapped hydel power but compared to other countries such as the USSR or the USA, the per capita availability of coal is low. Is this concern with energy consumption and especially power a mere bogey you will ask that I am raising? I think it merely requires a glance at the successive Plans to see how this energy intensity has affected our investment outlays. Whereas in the Fourth Plan the total investment in energy was 17 per cent of the total Plan, it rose to 25 per cent in the Fifth and is projected at 29 per cent in Draft Plan 1978-83. If the energy intensiveness of all economic activities and in particular of industry, the most voracious energy consumer, continues to grow in qualitative terms at this rate, most of the nation's public sector resources will be consumed in developing energy sources especially those which are the most capital intensive namely power and coal and becoming increasingly more so. State Governments are already alarmed at the proportion of their budgets which is being swallowed up in power generation and distribution and it is significant that in these days of demands of greater autonomy for the States this is one of the few State subjects in which they are not disinclined to see the Centre playing a greater role.

Therefore one of the main considerations that will increasingly have to go into making technological choices as well as locational choices for industry—modern transport being one of the most highly energy intensive activities—is the environmental and energy implications. There are thus many pressures—economic and social—driving us towards technologies which make increasing use of such energy sources One of the characteristics of dispersed small production units whether it is pumps for water or grain-dryers or mills is their apparent ability to make use of such energy sources.

These are some of the hard social and economic choices that have had to be kept in mind in formulating the Draft Plan and the technological and industrial imperatives that flow from them. □

Herald of a New Era

(Continued From Page 17)

Under the tribal development schemes the bank has extended credit to 13,300 tribals by providing finances to the tune of Rs. 1.04 crore for agriculture, development of dairy, minor irrigation and small scale industry with the active participation of Integrated Tribal Development Agency and Girijan Development Agency of the above districts. Nearly four thousand girijans were given crop loans to the tune of Rs. 34 lakh. About 3,500 girijans were given loans for purchasing plough bullocks. Under dairy 2,700 girijans were provided with milch cattle. Under a massive dairy development programme, in the agency areas three milk chilling centres were constructed at Araku, Chintapalli, and Seethampeta. The bank has extended loans to nearly thousand girijans for purchasing milch cattle in the area. A new scheme to develop orchards on a massive way to benefit girijans is under implementation. While nine branches have been opened exclusively for the tribals in tribal blocks another 10 branches are also working for them.

The bank has not only established a record in extending loans but the recovery percentage of the bank loans is 86 which speaks of its goodwill among the weaker sections.

It is a matter of pride intermingled with satisfaction that with its need-based approach and timely assistance to the weaker sections in rural areas, the bank has come very close to the people and is now a house hold name in the three districts. □

Efficient Water Use in Irrigation Projects

R. Gopalakrishnan

NEW technologies and research findings are being generated in our research institutions, but most often they remain within the four walls of these centres and do not reach the fields where they are to be taken advantage of for increasing production. One of the main reasons for this slow and tardy movement of technologies and research findings from laboratory to land is the lack of confidence on the part of the users on the practicability and profitability of the technology under their field conditions. The technologies and findings generated from the research institutions may require some modifications and adaptations to suit them under the field conditions. Large scale adaptive trials and demonstrations of new technologies are therefore necessary to gain the confidence and credibility among the users.

Operational research projects in agriculture are conceived with the above objective in view and in these projects it is intended to test, adapt and demonstrate the effectiveness of new technologies emanating from the research institutions in farmers' fields under the direct responsibility of the scientists. It is also intended in these projects to assess the profitability and credit worthiness of the new technology and to identify the socio-economic bottlenecks in its transfer. During the course of the implementation of these projects the research workers will get opportunities to acquaint with the field conditions and to identify the field problems demanding urgent solutions. These projects are implemented in units consisting of a cluster of 3 or 4 villages or a watershed and will ensure the integrated development of the area by making use of all the available resources. It is expected by the end of the project period usually five years, the production and returns of the participating farmers would have doubled and a sepectacular change in agricultural production would have taken place in the project area.

Research Projects in Kerala

There are a number of operational research projects being implemented under the auspices of the Indian Council of Agricultural Research and four of them, namely (i) Control of root wilt disease in coconut at Kayangulam, (ii) Garden Land Management at Kasaragod, (iii) Integrated pest control in rice in Kuttanad and (iv) Inter-cropping in tapioca at Trivandrum are functioning in Kerala.

An operational research project to demonstrate the effectiveness of scientific water management practices for increasing the water use efficiency in the command areas of irrigation project has now been formulated by the newly started Centre for Water Resources Development and Management and is being implemented in the command area of the Kuttiadi Irrigation Project in Kozhikode District.

In Kerala State, there are at present ten completed major irrigation projects and eleven are under execution. Besides these major ones, there are also a number of minor irrigation schemes. These projects are intended for irrigating the rice crop. The total area commanded by the 10 completed projects is 92,202 hectares (net). Of the eleven projects under execution, four projects have been partially commissioned and the total area covered by them is 39423 hectares (net) bringing the total area that has been brought under major irrigation to 1,31,630 hectares (net). The area covered by minor irrigation schemes upto 1976-77 is 92,790 hectares. Thus the total area brought under irrigation both by major and minor irrigation projects in the State works out to 2,24,420 hectares (net).

The cumulative expenditure for the 10 projects already completed is Rs. 2365.3 lakh and for the ongoing projects the latest assessed cost is Rs. 2707.5 lakh. The investment made for minor irrigation schemes since the first five-year plan period works out to Rs. 2640 32 lakh.

The present estimated cost of irrigation water in some of the irrigation projects of the State ranges from 4-5 paise to 10 paise per cubic metre. The cost of every millimetre depth of water applied over one hectare of land will range from 45 paise to one rupee which is one of the highest in the country.

Scientific Water Management

It is a fact, that in none of the command areas of these irrigation projects, scientific water management practices are being adopted and as a result the response to irrigation is very low. Analysis of the data of the experiments in farmers' fields has revealed that irrigation alone has contributed an increase of only 2.2 quintals of paddy per hectare on an average.

The following draw-backs have been commonly observed in the command areas of the major irrigation projects and these contribute in a large measure for the low water use efficiency. :

1. Lack of proper land development, especially construction of field channels with proper flow control structures.
2. Inadequate drainage facilities resulting in waterlogging and evils associated with ill-drained conditions.
3. Exhorbitant cost of conversion of garden land for rice cultivation and lack of suitable cropping pattern for such lands.
4. Heavy percolation loss especially in the converted garden lands.
5. High rates of transmission losses due to unlined channels.

R. Gopalakrishnan is Head, Education and Extension Divisio-Centre for Water Resources Development & Management Calicut.

6. Poor and irregular maintenance of field boothies.
7. Absence of a suitable cropping pattern.
8. Lack of sense of water management practices among the farmers.

Canal gauging done in a branch canal of the Neyyar Irrigation Project under the Pilot Project for Soil and Water Management has shown an average transmission loss of 54.42 cusecs million square feet of wetted area. Experiments conducted in the Kerala Engineering Research Institute, Peechi had shown that upto 30 per cent water was wasted when field to field irrigation was followed. Other types of water losses are due to evaporation and percolation both horizontal and vertical.

Thin Application of Water

Experiments conducted in some of the agricultural research stations have shown that evaporation loss can be reduced to some extent by thin application of water. This calls for proper levelling of the land. Experiments have also shown that for proper levelling the size of the plot should not be more than 1200 square metres. Estimation of water requirement of rice has shown that nearly 70 per cent of the total water requirement of the crop is accounted by percolation. It has been found that submergence more than 5 centimetres is harmful especially for the dwarf varieties of rice and that upto 34 per cent irrigation water can be saved by providing land submergence during the critical stages of crop growth and providing saturation during other periods.

In water management, drainage is as important as irrigation. Lack of adequate drainage will set at naught all the benefits accrued from irrigation projects As a matter of fact, if it is paucity of water which has become problematic during summer months it is lack of drainage and waterlogging that have become problematic during the monsoon period. The main reasons for the poor yields of rice during the first crop season (April-May, August-September) in Kerala is lack of drainage and water logging experienced during this period.

Results of experiments under the Pilot Project for Soil and Water Management in the Neyyar Command Area show that there was increase in yield of 14.3 per cent on an average by providing drainage in areas where drainage was a problem.

For increasing water use efficiency the following measures have to be resorted to :

1. Field to field irrigation has to be discouraged and independent irrigation channels should be provided to each field. If this is difficult due to the extreme smallness of the fields a group of fields constituting about 0.5 to 1 hectare should be given independent irrigation and drainage channels. Within this farm unit irrigation may be done following the field to field method.
2. On farm development by way of providing flow control structures like diversion boxes, drop pits etc. should be done for more efficient water control in the field.
3. Proper levelling of the plot should be done.
4. Recommended package of practices and cropping pattern, should be followed.

The Kuttiadi Irrigation Project is for harnessing the water of Kuttiadi river and consists of a major dam at Peruvannamuzhi across the Kuttiadi river and a network of distribution system. The projects will irrigate 14500 hectares of rice lands in Kozhikode, Quilandy and Badagara taluks of Kozhikode District and the gross command area has been estimated to be 31020 hectares.

Water Management

With the commissioning of the irrigation project water-logging, ill-drainage and other water management problems are being experienced in the command area. An appropriate cropping pattern and a scientific scheduling of irrigation have to be formulated. Adoption of scientific water management practices will be possible to increase the total production of rice in the commiand area at least by double.

The present operational research project in water management covers 3 blocks of 200 hectares each selected in the three taluks of Badagara, Quilandy and Kozhikode within the command area of Kuttiadi Irrigation Project. The technical programme includes the following items :

1. To conduct a detailed survey of the existing farming systems and formulate individual farm plans with special emphasis on water management.
2. To identify the soil and water management problems in the selected units.
3. To demonstrate remodelling of field layout by providing independent irrigation cum drainage channels for each field.
4. To test, evaluate and demonstrate suitable cropping patterns both for wet and garden lands.
5. To demonstrate the beneficial effects of providing drainage in the areas affected by waterlogging and ill-drainage.
6. To test, evaluate and demonstrate the economics of lining field channels with special reference to saving of land, labour and water.
7. To test, evaluate and demonstrate suitable techniques of irrigation in garden lands.
8. To impart training to farmers on improved water management practices.

The duration of the scheme is for a period of five years and the total expenditure is estimated to be Rs. 13 lakhs. The project is implemented in collaboration with the State Departments of Agriculture, Irrigation, Co-operation and Community Development and with the help of all other agencies involved in integrated rural development.

The agronomical, engineering and socio-economic problems experienced by the cultivators in the command area of irrigation projects are numerous and they will vary according to the local situations. They will have to be identified and solved in order that maximum benefit is derived from the irrigation projects commissioned at heavy expenditure. It should be the function of the operational research projects to identify and solve these problems. These operational research projects can serve as agencies to give research support for sound implementtion of the various programmes under Command Area Development Authority. □

Planning for Rural Prosperity

P. S. Sangwan

INDIA is one of the countries, striving hard to catch up with the modern trends of industrialisation as also to modernise its agriculture to step-up the levels of foodgrains production through higher productivity per unit area by adopting most recent know-how of modern techniques and methodology. The industrial base at the time of Independence, was infact very slender whereas the agricultural sector was almost static, incapable of feeding its teeming millions. Consequently the people were groaning under poverty. Added to this woeful condition was an explosive situation of ever-increasing population coupled with a long period of economic stagnation.

It was under such conditions that a very timely and thoughtfull drive with full vigour had been launched with specific programmes and projects to lift the economy from stagnation and to pull-out the agricultural sector out of its morass so as to lead it to an era of dynamism. The programmes taken up were: creation of minor irrigation facilities to achieve quick results; soil conservation measures to protect the crop lands; supply of pure seeds of improved varieties of crops and chemical fertilisers to step-up production besides the major river valley projects to irrigate hitherto partchy lands of low productivity and necessary reorganisation of administrative set-up, etc, to meet the challenge of time. The projects of long gestation periods like River Valley Projects, Fertiliser Factories were also intended to create an infrastructural facility for attaining the stage of stability in growth of economy as a whole. Through a nation-wide programme of Community Development and National Extension service, an awareness was created among ruralities to harness their potential man-power towards the gigantic task of increasing our agricultural base and economic reconstruction.

For optional utilisation of land and water resources of our country and to achieve the projected production targets of various crops/plantations, it is obvious that we have to make an intensive use of quality seeds of high yielding capabilities, judicious application of economic dosages of balanced fertilizers on both irrigated and dry farming areas, introduction of muultiple cropping in irrigated lands besides efficient and timely application of other inputs on scientific lines in package form.

In foodgrain production, the emphasis was on increasing the Unit level productivity (verticle approach) by bringing in more and more area under High Yielding Varieties Programmes (HYVP) rather than horizontal approach for covering more areas under various conventional crops. As a result the use of newer CULTVARS was made, especially in wheat/paddy and millets, where new hybrids or synthetic strains were put forth from research fields. To achieve desired level, it is rather mandatory to make use of requisite inputs, both monetary and non-monetary in a package form coupled with an application of production know-how as a strategy for transfer of improved technology. The new method of agricultural extension, popularly called as "Banor" pattern, based on Training and Visit (T&V) system was adopted in most of the States and is expected to give an appreciable dent, in due course of time

P.S. Sangwan is Joint Director in the Agriculture and R. D. Division in Planning Commission. The views expressed here are his personal.

Crop Rotation

The production levels of pulses and oilseeds which are lagging much behind the actual demand of these commodities, will have to be stepped-up by growing these crops in newly irrigated areas and with the use of improved high yielding varieties. This would necessitate a two pronged attack to achieve the goal, by securing additional area already under other uneconomic crops, or by diverting areas from such crops where an appreciable surplus production level has already been attained at the moment and by utilisation of available fallow lands which appear suitable for growing short duration crop varieties of pulses and oilseeds and for fitting them into a recommended crop rotation network of that particular region. This again has to be achieved by timely and effective application of a package approach with approved agronomic practices and combination of essential inputs to increase the unit level productivity.

In the case of cash crops, like ground-nut and cotton, our further efforts will have to be oriented to improving the efficiency of water management techniques and multiple cropping systems besides a progressive spread of irrigation under these crops. There has to be a constant emphasis on the development of better suited quick maturing varieties in groundnut; growing of sunflower by utilising the leftover soil moisture especially in mono crop areas of Central India in rabi season to augment the oilseeds production of the country; growing of sunflower and soyabeens in Kharif in new suitable areas both for oil extraction and to meet the demand for pulses especially in and around tribal areas. Other special measures like timely supply of irrigation to suit particular cash crops of selected areas, remission of irrigation cess on oilseeds/pulses, subsidised application of plant protection measures taken on mass scale, like aerial spray of cotton or eradication of certain insect/pest infestation may further help in reaping better harvests in future, as most of these crops are highly prone to such attacks.

With a position of comfortable surplus having been attained in the production of foodgrains, the price shift has to be tilted in favour of cash crop, i.e. any conventional or new commercial crop (s), to act as an instrument of change for reallocation of acreage. High value crops would automatically act as incentive to the growers who would thereby divert foodgrain area to cash crops.

The watershed management approach which has come to stay more or less as a very potent tool for achieving an increased production from unirrigated lands in area-based D.P.A.P. and Desert Development programmes in the country for improved utilisation of soil and water resources and its consequent effect on

area cropping patterns, has to have priority consideration in implementing agricultural programmes in such dry and drought prone areas. The dryland research organisation with tentacles spread all over the country has advocated for adoption of newly evolved dry-farming crop production practices, growing of mixed/companion crops of pulse/oil-seeds with cereals in dryland areas which has to be given a practical shape.

Hence, the continued emphasis hereafter on accepted thesis of watershed planning of agricultural projects for purposes of undertaking proper soil conservation measures and efficient utilisation of soil-water resources, is very likely to ensure atleast the minimal output, if not the optimum, against the likely aberration of weather especially the monsoon or its erratic distribution/spread in the arid and drought prone areas of the country.

Lab-To Land Approach

The ICAR-backed national demonstrations and operational research programmes based on whole village approach and its new concept of Lab-to-land, would have to be continued further for testing the technological innovations in agriculture, animal husbandry and other allied subsectors to find out a better suited technology for transference at the field levels. In order to backup these demonstrations the research base will have to be further intensified in critical areas like pulses, oil seeds, dryland farming, etc. besides creating a genetic resources bank for both flora and fauna for effecting further improvement towards higher productivity, quality or resistance capabilities to suit varied agro-climatic conditions and to meet our specific regional and seasonal situations of production.

Proper storage and timely supply of such essential inputs like seeds, fertilisers, plant protection materials would need further strengthening of infrastructural base to avoid any possible chance of an adverse impact on our production.

With regard to minor irrigation it would be necessary to ensure speedy completion of incomplete or spillover works; specific quota reservation of electric supply for farming sector to run water pumps and tubewells, credit planning at district level for institutional finance and also a proper emphasis on undertaking community works under "food-for-work" scheme, etc. are essential.

In order to maintain the desired or targetted tempo, a system of continuous monitoring of achievements should be emphasised in each state with a nodal point at the Directorate of Economic and Statistics and the Minor Irrigation Division in the Ministry of Agriculture and Irrigation for ultimate analysis and feedback for policy planning and decision making.

Necessary reliance should continue to be laid on the cooperative credit structure for channelising the requisite quantum of agricultural credit, for which strengthening of hierachical chain was proposed to be taken up during the past plans, besides taking up specific measures for smooth flow of credit to weaker sections engaged in agriculture or allied pursuits. Necessary facilities are to be afforded for increased involvement of commercial banks and regional rural banks now operating in the rural areas. The activities of Agricultural Refinance and Development Corporation (ARDC) has to be diversified further so as to provide for more and effective coverage in sub-sectors other than the minor irrigation works especially in under-developed and underbanked regions of the country.

In order to provide for an effective field level support through subject matter specialists for purposes of timely transmission of modern technical know-how, a number of States are expected to embark upon the comprehensive rehauling of their extension machinery at various levels by switching over to the, so-called, Benor pattern, based on training and visit system (T&V), The positive impact of the same is awaited still.

In respect of infrastructural facilities for marketing and storage in the public and cooperative sectors as well as at the Panchayat and individual farm levels, the necessary strengthening of the structure is a sine qua non.

The recent spurt in the production of some of the seasonal commodities like potatoes, apples, etc., has however, necessitated the framing up of better planning strategies for further production, internal marketing as well as for exports, wherever feasible. In order to impart a new dimension to the export of primary sector goods (agricultural, horticultural, animal husbandry) and agro-based products, while keeping fully in view our likely domestic consumption of each such commodity, so as to retain its price levels within the reasonable limits as also the production potential in specific areas, it would be high time that necessary precautionary steps are taken for formulation of long range perspective policies for export of traditional as also non-traditional goods, so as to ensure a reasonable price return to the producers, quality standards of products to the foreign buyers and for firming up our foreign exchange reserves.

Integrated Cattle Development

The respective states are aware of and keen on implementing, various developmental programmes by strengthening their own expertise at various levels to undertake applied and basic type of studies for creation of a firm data base of production. The requisite steps have also to be taken to impart training to inservice personnel in modern methodology like frozen semen technology, A.I., and management techniques of poultry pigery, sheep, goat keeping and wool production besides training of farmers/beneficiaries and para-level technical staff for organising and implementing these programmes. The programmes on crossbreeding in cattle with exotic dairy breeds and buffalo development using the frozen semen technology should continue further under the ICDPS and Operation Floods I & II projects and so also the milk production and marketing projects in areas|states not yet covered by these Operation Flood Projects.

FORESTRY: Social forestry including reforestation of degraded forests and programmes for the development of the Himalayan ecosystem should continue to receive the emphasis. The plantation programmes as envisaged in past plan periods may continue through Forest Corporations which are set up in different states and the infrastructural development may also receive due inpetus to support the proposed forestry development programmes and the forest based industries. □

BOOKS

Harijans

Destitutes and Development : A Study of Bauri Community in the Bokaro Region, Nirmal Sen Gupta : New Delhi, Concept Publishing Company, Pages : 118 Bibliography Index, (Cloth) ; Price Rs. 40. $ 8.

THE MAHATMA named them as *Harijans* and thought that by doing so they would be given social sanctity and would be treated equal to the *Bhusurottamas*—the gods on earth, the *Brahmins*. But the Mahatma's dreams proved to be only day dreams. The *Untouchables* (remember, still the term is widely used) are still treated very badly. Chronic unemployment, acute poverty, unspoken misery, bonded slavery etc., are the characteristic features of these people. *Destitutes and Development* is an excellent non-technical account of the *Bauris*—a Harijan community—the lowest among lowely placed communities of the Scheduled Castes in India—living around the Bokaro steel city industrial complex—the biggest steel plant in Asia, the biggest industrial project ever undertaken in the country. The Bokaro is pride for the nation, a peak of excellence for the nation. But what about the small communities living around it? How are they living ? Are they too-pride for our nation. The book under review answers these questions.

The book contains a very interesting detailed analysis of economic social and political aspects of the lives of the Bauris It gives a picturesque description of how economic transition of the society—say industrialisation—increases the misery of these people rather than the other way. Transition first robs the under-privileged people of all the safe guards they had under the old system, but since the transition itself is moulded by the privileged group it does not yield any benefits to the destitutes For example, social services like schools, hospitals, employment exchanges etc. are very rarely found within the reach of these people Often the people do not possess even the knowledge that such scopes exist or how to avail them of Even if they are aware, these bonded slaves do not have time to take their ailing children to hospitals. Even the government food-rationing system remains out of their reach. These people remain outcastes from almost all the scopes of the transitioned system which further has already destroyed their original form of social existence and their habitual ways of living.

The book presents, in fact, a very readable account of the several aspects of their lives—social cultural religious economic educational, occupational, demographic, martial extra-martial etc—and how they are discriminated and exploited in every respect—from economic to sex life Readers would be shocked to go through the social realities presented in the book.

Any body who is interested in the social realities of our fellow human beings can hardly miss the book.

Jandhyala B. C. Tilak

Applied Evaluation

Fundamentals of Applied Evaluation by K. Puttaswamaiah; Oxford & IBH Publishing Co New Delhi, pages 227; Pirce Rs. 48.

IN the context of the present gush of project appraisal and evaluation in the process of planning and development the book aims at being a handbook for project-planners, evaluators and administrators. It deals with a wide range of topics connected with project apraisal, monitoring and evaluation, right from the field—investigation stage to the presentation of the roport. Chapters on methods and issues in field-invstigation, statistical techniques and data source for evaluation are good and comprehensive enough for a project-planner.

But the second-half of the book which deals in techniques in evaluation and appraisal remains highly deficient with regard to the subject matter. The subject of applied evaluation has made rapid progress in recent years giving rise to intricate controveries regarding concepts, tools and techniques to be used. But the book has a mere superficial description of social-cost benefit analysis, PERT, CPM, Line of Balance Technology, input-output technique etc. Each of these have several issues to be dealt with, which a baffled project-planner would like to have them settled for himself. But the book has completely overlooked these issues. For a Project-planner, the 'trickiest' problem arise while formulating and evaluating a project not while collecting data or writing a report His problems are regarding weightage given to different objectives, selection-criteria, internal rate of return etc. But the book has not really dealt with these formidable problems although they appear and re-appear at different stages of applied evaluation

Presently, there exists a big vacuum in the field of books on applied evaluation. But this book inspite of its attempt has not been able to bridge the existing gap There cannot be any short-cut to a subject like applied evaluation

—Neela Sen Gupta

Guide for Investors

Taxes and Incentives—A Guide for Investors published by Indian Investment Centre, New Delhi pages 189—price Rs. 20 00

THE Indian tax system provides a number of incentives by way of tax exemptions, concessions and straight deductions from income to encourage investments and activities conforming to the priorities and plans of industrial development In determining the effective incidence of taxation, therefore, it is necessary to take into account the benefits accruing from these incentives

The brochure on TAXES AND INCENTIVES which is the thirteenth edition, is an attempt to provide an easily readable guide for investors seeking information on the liability and incidence of direct taxes payable by individuals and companies in India It ventures to give useful information on matters pertaining to direct taxation in a simple manner particularly to those Indian and foreign investors who are keen on gaining information about the difficulty and incidence of direct taxes payable by the individuals as well as corporate sector in the country.

The edition contains the latest changes made by the Finance Act of 1979. Not only does it contain some important changes effected by the Act, but also the latest amendments to relevant circulars issud by the Central Board of Direct Taxes regarding taxation of non-residents on their income from business connection in India and their income from royalties, technical services, fees etc. received from Indian collaborations

The tax incentives given to Indians deriving income from abroad are discussd in a separate chapter with special reference to the new incentives offered by the Government. The incentives offered by way of deductions from income and tax exemptions have been discussed at length with a view to encouraging investment in the activities conforming to the priorities and plans of industrial development. All the provisions, which foreign investors and collaborators in India would find of special interest, have been summarised in a separate chapter entitled TAXATION OF FOREIGN INVESTORS'.

The brochure gives all relevant and useful information a tax payer and an investor ought to know. A useful guide indeed

B. R. Kharbanda

From Darkness to Light

S. Prasad

IN AN unswept corridor of a Bombay chawl, a young mill worker lay curled up in sleep, with an unusual pet in his lap—a kitten He was exhausted after his shift. Two floors above his wife was engaged in a different kind of activity. She was one among a group of about twenty women learning the first lesson of literacy. She had a good reason. Part of the morning lesson dealt with water conservation, with tips on how to save water and thus avoid campus brawls. For water could sometimes become a scarce commodity

The new learning has various linkages and water conservation is only one of them In a textile mill, the workers were occupied in a different kind of learning, upgrading their skill through in-service training. They were students of the polyvalent adult education programme, which is allied to the National Adult Education Programme. The first of its kind was set up in Bombay as the Shramik Vidyapeeth in 1967. The diversified courses in the system today [number n]early a thousand and run the gamut from weaving [to] doll-making.

The [pay]out, according to one of the workers, is no[t in]substantial—an increase of nearly ten per cent [in m]onthly earnings, resulting from improved per[forma]nce. The mill management felt equally enthusiastic, for the training had led to a considerable fall in the wear and tear of the machinery

Functional literacy is the flame that makes the new lamps of learning burn brighter than the old, for learning here is linked to earning. At places, like the experimental centres being run by the girls of S.N.D.T. University for Women in Bombay, it is fish-rearing and vegetable growing. According to the Vice-Chancellor, Smt. Madhuri Shah, in the process, untapped nutritional sources are being harnessed to aid the rural poor

Although the progress of the National Adult Education Programme has been uneven in the country in the first year, Maharashtra is one of the States, where the going has been good because of a strong tradition of social service

In Pune, learners huddle together in the open maidan over smelly drains to imbibe lessons that include sanitation and health care They defy their dark slums not merely to learn the three R's, but also to produce small items of consumer interest like file-boards, to fetch them some extra money. The University of Pune is providing a bridgehead to the campaign through its Centre of Continuing Education. A dedicated faculty is backing it up with some inexpensive gadgetry to help sustain the visual part of the programme The Centre aims at promoting self-sustaining programmes It is also training personnel in the field of adult education, besides conducting research in this sphere

A scabies-hit, malnourished village, in the vicinity of Pune, is slowly turning into a music-filled, chirrupy rural scene, thanks to the extension activities of the University. A band of workers, who have adopted the village, spend every week-end and holiday among the people, tending to their various needs, including education

The State Resource Centre for NAEP, located at the Indian Institute of Education in Pune, has been churning out material in Marathi, with an eye on functionality One of its colourful booklets, takes off on eye-care, lack of which is the cause of a common ailment specially among the poor.

The NAEP is being backed up by an ambitious programme of universalisation of primary education. NAEP and Universalisation are the two faces of the same coin.

And, finally, what is the alternative to adult education in a country where the number of adult illiterates is likely to reach 286 million, by 1990 ?

Prasad is Director, Public Relations, (Education) PIB, New Delhi

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OUR ACHIEVEMENTS

National Income up by 4 per cent

NATIONAL income rose by 4.1 per cent in 1978-79, against the increase of 8.2 per cent registered in 1977-78 at 1970-71 prices At current prices, national income rose by 7.1 per cent and per capita income by 5.1 per cent in 1978-79 over the previous year's level. The per capita income in 1978-79 increased by 2.1 per cent.

The net rate of savings at current prices also rose from 18.3 per cent in 1977-78 to 19.3 per cent last year. Gross national product last year is estimated at Rs. 48,607 crore at 1970-71 prices and Rs. 85,655 crore at current prices. Net national product is put at Rs. 45,637 crore and Rs. 80,090 crore, respectively

Silk Exports Fetch 45 crore

EXPORT of silk goods has gone up by 17.3 per cent in 1979, compared to 1978. Last year 106.73 lakh sq. metres of silk valued at Rs. 4542.95 lakh was exported against 119.12 lakh sq. metres valued at Rs. 3,872.47 lakh in 1978 West Germany and the USA purchased mulberry silk goods worth Rs. 748.38 lakh and Rs. 576.71 lakh respectively, topping the list of importing countries.

Dress materials, carpets and sarees were very popular with the overseas buyers, followed by scarves, stoles and readymade garments.

In case of tasar silk goods, West Germany and the USA topped the list of importing countries with imports valued at Rs 320.67 lakh and Rs 157 42 lakh, respectively.

Spurt in Mineral Exploration

ALL-ROUND improvement in various operations of mineral exploration, such as drilling, mining, manufacture of drilling accessories, mineral investigation and mine construction, resulted in a significant increase in the income of the Mineral Exploration Corporation Limited (MEC) during 1978-79.

A total of 1,83,255 metres of drilling and 7,786 metres plus 2,226 cu. m. of mining along with requisite geological and analytical work was done compared to 1,33,618 metres of drilling and 6,016 metres plus 2,228 cu. metres of mining in 1977-78.

The drilling and mining achevement of the Corporation during the year 1978-79, was the highest since the setting up of the Corporation in 1972 and the overall rig month average during the year was 130 metres compared to 110 metres during 1977-78.

Exploration for coking and non-coking coal constituted about 70 per cent of the total drilling work. The work on bauxite claimed the major share of the remaining drilling work, followed by copper. iron ore, dolomite, limestone, chromite and lead-zinc.

A total of 1,333 metres of development work was done in the filed of mine construction during the year. During 1978-79, 340 metres of drilling and 87 of drifting was done in the field of geotechnical investigation at the Dihang and Subansiri project on behalf of Brahmaputra Flood Control Commission.

During the year under review, income of MEC increased significantly to Rs. 10.67 crore compared to Rs. 8 25 crore in the previous year. The Corporation earned a record net profit of Rs. 18.4 crore in 1978-79. It is attributable to increased productivity and optimum use of equipment, combined with economy in expenditure.

The Corporation's activities during the year 1978-79 were spread over 55 projects out of which 49 were for mineral investigation, four for mine construction and two for geotechnical investigation.

Rise in Exchange Reserves

INDIA'S foreign exchange reserves stood at Rs. 5,395.02 crore exclusive of gold holdings and Special Drawing Rights at the end of 1979. This represents a massive increase over the Rs. 587 40 crore of such reserves as at the end of 1974.

The phenomenal growth was mainly due to export buoyancy from 1974 to 1977 and the striking growth in the net inflow of invisibles, including remittances from abroad.

Exchange reserves, excluding gold holdings and Special Drawing Rights, increased during the calendar year of 1975 by Rs. 166.56 crore in 1976 by Rs. 1,544.24 crore, in 1977 by Rs. 1,699 79 crore and in 1978 by Rs. 892.06 crore.

Central Railway Earns More

DURING the 11-day period ending January 31, 1980 the Central Railway earned Rs. 9.34 crore in originating traffic, as against Rs. 7 67 crore earned during the corresponding period of last year.

The earnings from goods traffic increased by 23.08 per cent from Rs. 3.90 crore to Rs. 4.80 crore, and the passenger traffic increased by 16.67 per cent from Rs. 2.94 crore to Rs. 3.43 crore.

During the month of January 1980 the Central Railway's orginating earnings was also the highest at Rs. 25.26 crore compared to Rs 21.84 crore earned during January 1979, an increase of 15.66 per cent.

Increase in Our Labour Force

LABOUR force in India reached 273 million in 1978 from 231 million in 1971.

Out of this 225 million was in rural areas and 48 million in urban areas in 1978, as compared to 193 million and 38 million respectively in 1971.

Among them, 184 million were males and 88 million females in 1978, against 155 million and 76 million respectively in 1971.

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Food, A New Component For Development

ESSENTIALLY an article for daily consumption, food is now being used as a stimulus for economic growth and employment-generation under the Food for work Programme since April 1977. Really speaking, with a comfortable buffer-stock of foodgrains bursting at its seams and per capita consumption of food going down, it would have been sheer callousness of heart and criminal folly if such action were not taken. Of course, there were many misgivings when the programme was launched; even now it cannot be said that all the nagging doubts have been resolved and new ones have not surfaced in the course of the working of the programme. The scheme never envisaged gratuitous relief despite its laudable abjectives. It never envisaged any test relief work of the type usually undertaken by the Government as a temporary measure to tide over the crisis caused by natural calamities. Even so, it demonstrated most effectively its inherent capacity to take in stride such disasters as followed the unprecedented flood havoc in West Bengal.

Considering the immense potential of the programme in the frontal assault on rural poverty, the Planning Commission has done well in releasing recently an interim report embodying a quick evaluation study. Such a survey which hardly took three months and comprised only 793 selected households in 80 villages located in ten different States can at best be indicative and by no stretch of imagination exhaustive. Yet it reveals both the seamy and ornamental sides of the structure in equal measure. The study has confirmed some of the complaints which were heard soon after its launching. Panchayats and contractors had a field day in some selected villages with false muster rolls and fictitious beneficiaries. In some States, the foodgrains handed over to the contractors were sold by them in open markets, causing the degeneration of food into cash which largely went to swell the coffers of those who administered the programme. The supervisory staff in two States were reported to have extracted ex gratia payments at the time of distribution of foodgrains to the beneficiaries. These and other ills pointed out by the study can be remedied if only the will to do is there. The evaluators are equally bold in making the assertion that 3 7 lakh mandays employment was created in the selected villages. The utilisation of foodgrains released was almost 100 per cent in about 20 selected districts, between 60 and 90 per cent in 5 districts and between 50 and 60 per cent in 4 districts. The overall increase in income for all the households in the selected districts came to about 17.7 per cent By and large, the objective of creating durable community assets which will provide necessary infrastructure for economic growth and wellbeing in rural areas has been realised. Greater technical support is called for if minor irrigation and soil conservation are included in the programme.

Commenting in our columns on the massive scheme of production-cum-distribution system launched in July last, we remarked that it would have to overcome many obstacles in its way before it can succeed. The evaluation study has incidentally exposed the woeful inadequacy of our public distribution system. The evaluators noted complaints from several States about considerable delay in supply of foodgrains and lack of storage facilities for foodgrains at the distribution points. It was also reported that due to delayed supply of foodgrains, the contractors had no option but to pay the wages in cash and sell the foodgrains later in the open market on receipt of supply.

Conceptually, the programme has a good deal to recommend it. The evaluation study, although a quick one, has brought out flaws in its working and pointed out remedies in precise terms. It is heartening to learn that the authorities concerned are going to act on the lines suggested. □

NBO's Role in Housing the Rural Poor

G. C. Mathur

THE PROBLEM of rural housing in our country is diverse in nature and enormous in magnitude. It has grown over the years due to rapid increase in the population on the one hand and low rate of new housing construction on the other. Of the 54 82 crores people, who constituted the 1971 population of India, 43 9 crores or about 80 per cent lived in villages.

The number of rural settlements, not exceeding a population of 5000, called villages, in 1971 was 5.8 lakh and their size varied considerably. The physical pattern of rural settlements in India is also of variable nature and can be broadly classified as .

(i) dispersed clusters.
(ii) linear clusters.
(iii) tightly nucliated rectangular or shapeless clusters.
(iv) the isolated households or hamlets.

Rural Housing Shortage

In many respects the housing conditions in rural areas are far from satisfactory. Rural dwellings are usually small, insanitary, often in dilapidated condition. The houses are made of locally available building materials that are flimsy and non-durable which require frequent repairs.

Of the total housing stock of 7.44 crore dwelling units available in 1971 in rural areas, 0.8 crore were unserviceable kutcha, 2.44 crore were serviceable kutcha, 2.79 crore were semi-pucca and only 1.41 crore units were pucca. Therefore, the usable or livable housing stock in rural areas was only 6.64 crore dwelling units as against 7.8 crore households and thus accounting for 1 16 crore housing shortage. According to recent estimates of National Buildings Organisation, the housing shortage in rural areas is of the order of 1.51 crore dwelling units in 1980.

G.C. Mathur is Director, National Buildings Organisation, New Delhi.

The problem of housing in rural areas is more qualitative than quantitative. Apart from the quality of house, congestion is also dense, the household size was 5.6 according to 1971 census and it was further estimated that about 76 per cent of rural households had 1 to 2 rooms, 18 per cent have 3 to 4 rooms and 6 per cent have 5 or more rooms.

Environmental Inadequacies

By and large, in some respects environmental conditions in the villages are also unsatisfactory. It has been estimated in the 28th round of NSSO (October 1973-June 1974) that 7.6 per cent of the rural households have no built-up latrine.

Protected drinking water facility, i.e., drinking water from tap is available to only 4.7 per cent of the households. The sources of water which may be exposed to the risk of pollution, available to households are about 65.3 per cent from wells, 12.7 per cent from tanks and pounds, rivers etc., 15.6 per cent from the tube wells and hand pumps and 1.2 per cent from other sources.

With a few exceptions, rural villages have grown without proper planning and their layout is, generally, haphazard. The villages are mostly congested with narrow lanes and paths which become muddy and slashy, particularly during rains.

It has been generally agreed that any programme of rural housing has necessarily to be based on the following principles:

(i) Aided self-help, outside aid, particularly financing being restricted to the barest minimum. Adequate technical guidance should, however, be made available.

(ii) Improvement of housing in a village or the physical re-construction of a village to be treated as a long-term programme.

(iii) All round economic development of the rural area in which the programme is undertaken to enable the villagers to maintain their houses and to repay the loans taken by them for the building of their houses without any undue hardship.

Rural housing programme must obviously form part of an overall rural development programme based, above all, on progressive increase in agricultural production and in local employment opportunities, and should be formed in such a way as to enable it to take on the form of a steadily developing efforts in which local resources and local initiative play ever increasing role. The immediate need, therefore, is for an educational approach to the village people to awaken in them the desire to rebuild their villages either by expanding the existing site or an adjoining place of land.

Minimum Needs Programme

Much headway could not be made in providing minimum level of social consumption to different areas and sections of the community because various steps taken, did not have the desired impact as related programmes did not receive high priority. Therefore, a Minimum Needs Programme was introduced during Fifth Five Year Plan to establish throughout the country a net-work of certain essential services on a coordinated and integrated basis. The programme envisages achievement of the aforestated basic objective by providing a minimum level of social consumption including providing house sites for landless labourers in rural areas, supply of drinking water to problem villages providing rural roads, ensuring rural electrification and facilities for elementary health and education etc. Under the current Plan (1978-83), the programme based on upgraded norms is designated as the "Revised Minimum Needs Programme". The minimum facilities to the rural areas under this programme are expected to reduce rural-urban migration and at the same time disperse economic activities and make the benefits of development reach as large a section of the rural sector as possible.

House Sites to the Rural Landless

Under the Minimum Needs Programme, one of the schemes given more emphasis was to provide free house sites to the landless workers in rural areas. This scheme was introduced by the Ministry of Works & Housing in October 1971 under which hundred per cent grant/assistance to the State Governments is given for acquisition of land and its development for allotment of house sites to landless workers in rural areas. The house sites are provided free of cost to landless workers who do not own a house site or a built up house or a hut on land of their own. The allottees are expected to build houses/huts thereon with their own resources. Since April, 1974, the scheme has been transferred to the State Sector and funds are provided by the Central Government in the form of loans and grants. Under the scheme, house sites measuring 82.2 sq. meters (100 sq. yards) are allotted to the landless workers. In some states, house sites of even larger area are being given. While allotting the sites the States/Union Territories are expected to ensure that there is no segregation of families belonging to scheduled castes/tribes etc., as a measure of social integration.

Work Done by N.B.O.

The problem of improvement in rural housing and village planning has been engaging the attention of the N.B.O. of the Ministry of Works and Housing. The primary function of the N.B.O. is to coordinate research in building and housing and to bring about speedier application of results of research in practice. Since its very inception, NBO has been giving singular attention to improvement of rural housing and environmental conditions. It has undertaken studies and surveys to assess rural housing problems and organised seminars to focus attention on rural housing problems such as improved use of local materials, extending the durability of rural houses and making them more liveable etc. Great importance has been attached to the study of social and economical aspects which have great bearing on rural housing and community development programmes. Rural housing competition have been promoted to get new ideas regarding planning, designing and construction of rural houses at low cost. Research has been undertaken for evolving waterproof mud plaster to protect mud walls from rains, treatment of thatch against fire hazard, and preservative treatment for bamboos to extend their service life etc., and results have been widely publicised for adoption in practice.

Houses for the Rural Poor

The N.B.O. has evolved a typical design of house for landless agricultural workers based on the minimum needs concept, keeping in view the cost limitations. This design has been widely circulated to the State Governments, housing agencies and the design concept has been adopted at many places with such modifications as required to suit local requirements.

The design is suitable for plots of size 6mx13.7m (100 sq. yds.) which are being allotted to the landless agricultural workers.

In a plinth area of 20 sq. metre the accommodation provided consists of :

Room	2.7m × 4.1m
Covered cooking space	1.5m × 1.8m
Platform	1.75m × 2.5m

The house design allows for construction of another room of 4.5mx2.4m (14'-9"x8'-0") at a later stage.

The rear courtyard provides open space for cattle shed as well as for a detached sanitary rural type latrine 1.2mx0.9m (4'-00"x3'-0") and a washing platform 1.5mx1.3m (5'-0"x4'-3"). The front open space in the design of house is intended for outdoor living and for house-hold industry etc.

Demonstration Houses

A twin unit demonstration rural house as per N.B.O. design concept was put up at Village Sultanpur in Delhi. N.B.O. has also recently put up a similar demonstration of rural houses in the India International Trade Fair held in November-December 1979 with a view to demonstrate improved use of local building materials like mud and thatch for building more

durable houses at cheap cost. To improve upon the life of sun dried brick walls, and conventional thatch, water proof mud plaster treatment has been given to both the walls, and to mitigate the fire hazard, thatch has also been treated with bitumen stabilised mud plaster. The actual cost of the house at prevailing rates in Delhi is about Rs. 1,800 when built through self-help; of this, the cost of material is estimated to be Rs. 1,300.

Regional Rural Housing Wings

Regional Centres for research, training and extension in rural housing had been set up in 1958 under the aegis of N.B.O. At present there are nine such centres which are located at Vallabh Vidyanagar (Anand), Gujarat, Bangalore, Chandigarh, New Delhi, Howrah, Srinagar, Jodhpur, Trivendrum and Varanasi. The Wings perform the following functions:

(i) To promote research on the use of local building materials, local techniques and designing of village house;
(ii) To propagate the use of improved materials and techniques;
(iii) To construct research-cum-demonstration houses;
(iv) To train and orientate the technical personnel employed on the projects under the Village Housing Projects Scheme.

1. *Training*

The Rural Housing Wings have so far conducted a total of over 230 training courses for technical personnel, Block Development Officers and Panchayat Raj Officers and training has been imparted to over 2,500 in—service persons from different States. The training in rural housing and village planning has helped the State Governments in undertaking large scale housing programmes in rural areas.

2 *Socio-economic surveys*

As improvement in rural housing is intimately connected with socio-economic aspects of rural life, the Wings have undertaken socio-economic surveys in over 300 selected villages. Information so obtained has been taken advantages of in evolving suitable designs of houses and village development plans.

3 *Designs of low cost houses*

Over 200 designs of houses to suit different regions have been prepared and supplied to the State Governments and other agencies for guidance. For evolving these designs, the requirements of the rural people, the building materials that are locally available, the climatic suitability of houses, etc., have been closely studied. Possible improvements to extend the durability and livability of the houses have been suggested.

4 *Economical designs of rural buildings*

The Wings have also prepared a number of designs of school buildings, Panchayat Ghar, health centres, child care centres etc., for the guidance of various agencies engaged in rural development.

5 *Improved use of local materials*

The Wings have extended results of research work done by Central Building Research Institute, Roorkee: Forest Research Institute, Dehradun; Structural Engineering Research Centre, Madras; National Environmental Engineering Research Institute, Nagpur etc, and also undertaken local investigations for effecting improvement in the use of locally available materials. Surveys have also been undertaken to assess the availability and potential of local materials and potential of local materials in different regions, including industrial and agricultural wastes. Some innovative construction techniques and improved use of local materials for building houses at cheap cost are briefly mentioned below:

Improvement of Mud Construction

(a) *Water proofing of mud walls*: Water proofing mud plaster has been evolved by application of which the mud walls are protected against erosion caused by rains. The water proofing treatment can be applied in two ways:—

(i) Bitumen emulsion is mixed with mud and straw (upto 5 per cent) and the plaster is applied on mud walls in the usual manner;
(ii) Spraying of coal tar and kerosene oil (1 : 2) solution is done on the mud walls with the help of a simple pump to provide protective coating on which rendering of lime wash is applied to make the surface white.

(b) *Use of stabilised soil blocks*. Stabilizers such as lime or cement or bitumen are mixed with soil in certain proportion (2 to 5 per cent) and the stabilised soil is either used for construction of wall directly by ramming or blocks are formed out of the same with which the wall is constructed. Water proofing mud plaster is applied over such walls. Walls constructed in this manner are more durable compared to the conventional sun dried brick walls.

Treatment of Thatch

Thatch is one of the most common types of roofing materials in villages. This is a different type of grass locally available which is used for thatching. However, such roofs easily catch fire and get destroyed in no time. Also the thatch decays in a period of about one to two years and needs to be replaced. Fire retarding treatment as well as preservative treatment for thatch evolved by C.B.R.I. which has been widely propagated by N.B.O. Fire hazard can be reduced to a considerable extent to thatch roof by applying the bitumen stabilised mud plaster at the top and bottom surface of the roof. Two coats of gobri leaping (mixed with bitumen) are given afterwards to seal the cracks which generally appear on the surface after the mud plaster is dried. To make the roof water repellant, top surface is coated with two coats of bitumen solution. Finally the roof can be white washed to give white appearance. The treatment is expected to last for about 6 to 8 years

Preservative Treatment of Bamboo

To extend the service life of bamboo, which is a poor man's timber and locally available in different parts of the country, chemical treatment of bamboos has been recommended by Forest Research Institute. Dehradun. The treatment consists of dipping the bamboo or passing through these 4 to 8 per cent chemical solution of Copper Sulphate Arsenic Pentaoxide and Sodium Dichromate or Potassium Dichromate.

Asphaltic Roofing Sheets

Asphaltic roofing consists of a new type of roofing sheet which are made from bitumen and waste paper etc. These have been developed as a replacement or a substitute for thatch roof. Such roofing sheets can be used as a replacement to asbestos sheets since they possess good insulation and are available at half the cost of asbestos roofing sheet. These can be adopted in areas where the temperature is not more than 42°C (108°F). Such roofing sheets can, therefore, be adopted in hot and humid regions, coastal areas as well as cold and hilly regions.

Instead of primary species of timber, use of a variety of local timbers can be made for making doors and windows. The Forest Research Institute, Dehradun have identified over 86 varieties of secondary species of timber suitable for house construction. However, it is necessary to season such timbers and also preservative treatment is required to be given.

Stone Masonry

Walls made of stone masonry are quite thick and will not be less than 38cm (15″). Moreover construction work is slow as stones of regular sizes have to be used in masonry work. Stone blocks could easily be cast with the help of simple mould and using irregular sized stones and cement concrete. By doing so, the thickness of the stone wall could be reduced to 20cm or 15cm (8″ or 6") which is sufficient from structural safety point of view and also the construction work progresses faster.

Precast brick panel roof/floor

Reinforced brick work for roofing and flooring has been extensively adopted, where good quality bricks are available. However, one of the drawbacks of such construction is that the reinforcement gets corroded and such roofs and floors are to be replaced after a period of 25 to 30 years. The C.B.R.I., Roorkee has developed a precast reinforced brick concrete panel system of roofing/flooring which are said to be more durable and economical than reinforced brick roofing.

Two-room houses built at Gowara village in Maler-kotla Block, Punjab with precast brick panel roofing.

The N.B.O. is implementing the continuing Plan scheme for the construction of clusters of demonstration rural houses alongwith environmental improvements in selected villages in different regions in the country. The scheme envisages construction of houses at cheap cost by making use of local building materials and improved designs and self-help labour.

Under this scheme, the village is selected with the help of State Government, under the guidelines issued by N.B.O. First of all, socio-economic survey is carried out to obtain data regarding living conditions specially those of landless agricultural workers. Physical and engineering survey are also carried out to ascertain the materials that are locally available and types of existing houses. The families for whom these houses are to be constructed are consulted to ascertain their specific needs, financial capacity, self-help and mutual help which could be taken advantages of for the execution of the demonstration housing project.

The beneficiaries are selected with the help of Panchayat and local authorities. On the completion of the project the houses are sold to the landless agricultural workers and rural poors through local authorities of State Government concerned. State Governments also extend loans/subsidies to such people under 'Village Housing Project Scheme' or other housing schemes of the State Government.

Under this scheme, so far 17 clusters of 10-20 demonstration houses, in selected villages in different regions in the country have been put up by the Regional Rural Housing Wings of N.B.O. to motivate rural people in adopting improved designs of houses, improved use of local materials, self-help etc. Some of the important projects undertaken by the Wings are briefly mentioned here.

Gujarat

In addition to construction of clusters of demonstration houses alongwith improvement in environmental conditions in Gujarat and M.P., some important demonstration projects taken up by the Wing are:

(i) construction of 24 low cost demonstration houses in the campus of Gujarat Agricultural University. The University Authorities have further requested the Wing to construct 24 more houses at its Dantiwade campus;

(ii) Construction of 8 demonstration houses at Central Institute of Agricultural Engineering (I.C.A.R.), Bhopal.

Karnataka

In addition to the construction of clusters of demonstration houses in Karnataka, Tamilnadu and Goa, the Wing, in collaboration with Karnataka Housing Board participated in the All India Rural House Design Competition sponsored by HUDCO. Accordingly, 4 villages were selected in different places on region-wise basis in Karnataka for constructing 50 houses in each village.

Howrah

The second cluster of demonstration housing project as per NBO's scheme was taken up in 1977-78 in Kaibartapara village of Assam in collaboration with the State Government and the Assam Housing Board, the first cluster of demonstration houses was put up in West Bengal. Similar project has been taken up by the Wing in Orissa The Wing also participated in collaboration with the West Bengal Housing Board, in the HUDCO's competition. Under this scheme, 80 units of houses, each costing Rs. 4,000 are to bo put up in Midnapur district of West Bengal.

Delhi

The Wing has put up one cluster of 20 demonstration houses in village Bankner in Delhi State so far and has evolved designs for putting up such demonstration projects in U.P. also.

Chandigarh

The Wing took up construction of demonstration houses at village Soonk, district Ropar, Punjab. Similar project proposals for Himachal Pradesh and Haryana are in progress.

Srinagar

The construction of demonstration houses at village Palpora was completed in April, 1978. The construction of a second cluster of 20 demonstration houses at village Sopian, Anantnag district has also been completed. Besides, serving the purpose of demonstration, this cluster is intended a part of the relief programme of the State Government for rehabilitating the victims of recent fire in Sopian.

Jodhpur

The Rural Housing Wing has completed a demonstration project of construction of 20 houses at village Nandra Kallan in Jodhpur district of Rajasthan. Similar projects have also been taken up at village Jadan in district Pali of Rajasthan.

Impact of Demonstration Houses

The surveys conducted by the Rural Housing Wings and the N.B.O. show that the demonstration housing projects have created a definite impact on the people in regions where they have been put up. As a result of this, various State Governments and private agencies as well, are approaching the Rural Housing Wings and the N.B.O. to construct such houses on their behalf.

On the basis of the designs of clusters of demonstration houses put up by the Rural Housing Wings and the designs evolved by NBO some State Governments have taken up the work of putting up such clusters under their massive rural housing programmes in the implementation of which N.B.O. and the Rural Housing Wings are actively associated.

(i) construction of 4,000 houses by Government of Punjab in the various districts of the State;

(ii) construction of 247 houses in the 9 villages of Gazipur district of U.P.

(iii) West Bengal have taken up Rs. 2.1 crore project for construction of over 19,000 houses in the rural areas in different districts;

(iv) the Assam Government is putting up cluster of 20 demonstration houses in each of the 12 districts.

Environmental Improvement

One of the priority area for rural development is improvement of environmental conditions including provision of potable water supply, sanitary latrines, drainage of waste water, paving of streets and street lighting, disposal of refuse, cowdung etc. Efforts are being made by N.B.O. and its Regional Rural Housing Wings to promote environmental improvement by introducing the following:

Orderly Development of Villages

Planning to cater to the future growth of villages and also for improvements in existing village habitations is necessary. For new housing projects N.B.O. has suggested planning norms for general guidance.

Sanitary Latrines

To improve rural sanitation it is neecssary to have built-in latrines with rural houses and in other types of buildings. A sanitary rural latrine has been developed which needs to be popularised. It consists of installation of pan which is connected with pipes to either a soakpit or a septic tank. It employs hand flushing only.

Smokeless Hearth

Firewood is most commonly employed as fuel. However, it produces lots of smoke which is injurious to health, and specially to the eyes. Designs of smokeless chulhas have been developed, the adoption of which also results in economy in fuel consumption. □

Mobilization of Finances for Rural Housing

S. M. Krishnamachar

GROWING awareness of the basic needs of rural areas in regard to shelter, infra-structure and services is of the recent origin. It is still to be matched by necessary means to meet the essential housing needs particularly of the very poor in rural areas. Financing rural housing including essential services like water supply and sanitation contributes greately to the process of socio-economic development. It has a great impact on the health, education, general welfare and productivity of the population; on income through employment in rural construction, on savings through rural capital formation in housing, on social and personal consumption through purchases of household goods and on changes in the motivation and attitudes of the rural population to the very process of development. Inspite, however, of the compelling social and economic importance of rural housing the problems associated with financing or rural housing schemes are largely the result of a very low priority assigned to housing in general and rural housing in particular in India's development planning.

Financial Dimensions

At the beginning of 1980, the rural housing shortage is estimated at 1.51 crore housing units. If the capital cost of a rural house is assumed, on an average, at Rs. 4,000 (at 1979-80 prices), the requirement of finance to wipe out the current housing shortage would be of the order of Rs. 6,000 crore or Rs. 600 crore a year if it is further assumed that the backlog of rural housing will be cleared in, say, a period of 10 years. This modest estimate of finance required for a rural housing programme does not, however, include the investment necessary to meet the housing needs of additional households formed on account of annual increases in population and also the replacement needs of existing housing stock. Besides, the capital cost of providing essential services like water supply and sanitation would require on an average, an outlay equivalent to 50 per cent of the cost of a rural dwelling unit.

High Cost of Construction

Relative to the annual income of an average rural household, the average cost of a dwelling is more in rural areas than in urban areas because of acute scarcity of capital resources, lack of banking and loan facilities, the seasonality and irregularity of rural income earnings, the disorganised rural money market and resultant high rates of interest on rural lendings, the high cost of building materials, lack of transport and communication facilities and above all, the illiteracy of the rural population. Further, it involves considerable consumption sacrifices in the case of the poorer sections among the rural households to invest in the construction of dwellings.

S. M. Krishnamachar is Deputy Director, National Buildings Organisation, New Delhi

The rural areas are conspicuous by grinding poverty, as the gains of development over the years have by-passed the rural poor. A look at the contribution of the rural and urban sectors to the country's national income over a period of 24 years from 1950-51 to 1973-74 reveals that, in per capita terms, the rural income increased by only 4.64 per cent during the period whereas the urban income rose by 49.17 per cent. In other words, in 1950-51 the national product attributed to one person in the urban sector was 3.70 times that of the one person in the rural sector ; in 1973-74, the urban product per person was 5.28 times the product attributed to a person in the rural sector. All this implies that in the matter of providing houses to the rural poor, the unit cost of construction will be high in relation to the income levels of the rural households. Studies have indicated that since wage levels of an average rural household ranges between one-fourth to one-third of the wages of the industrial labour household, the difficulty of mobilising savings for housing construction is intractable for 70 to 80 per cent of rural household. This is the reason why a majority of rural households continue to live in tiny and kutcha houses. This is also the reason for the slow growth in rural fixed capital formation in housing as compared to the urban fixed capital formation.

Among the major factors determining rural housing demand are the income levels of the rural people and the manner in which such incomes are distributed. In the case of ownership housing, it is the increase in the normal income of a household as distinguished from its current and transitory income which goes to finance the heavy investment needed for housing A Reserve Bank of India study has revealed that, in 1970 the top 10 per cent of rural households obtained 25 per cent of rural personal income as well as 25 per cent of rural disposal income. According to a recent study in 1973-74, 70 per cent (i.e. 62 million out of 88 million households) and 40 per cent (35 million out of 88 million) had an average annual disposable income of Rs. 1,270 less than Rs 900 respectively at 1973-74 prices. An analysis of the income level and savings capacity of the low-income rural households indicates that, in the case of very poor and destitute households, a life-time savings is not adequate to meet even a third to a fourth of the capital cost of housing construction, the average cost of a dwelling being a high multiple of the annual savings of the low-income rural households.

Government Finance

Given the gravity of the rural housing problem and the scarcity of capital resources, government finance has been the only important source for rural housing in the country. Compared, however, with the vast rural housing problem, the provision of plan finance for rural housing has been extremely limited. Under the Five Year Plans, budgetary support for rural housing has been made available for implementing (i) the Village Housing Project Scheme; (ii) the Subsidised Housing Scheme for Plantation Workers ; and (iii) the Scheme for Provision of House-sites to Landless workers in rural areas.

Under the Village Housing Project Scheme, which was introduced in 1957 as a Centrally Sponsored Scheme, loans were advanced to the individuals and cooperatives for the construction and improvement of rural houses. The loans which are restricted to 80 per cent of the cost of construction and are subject to a maximum of Rs. 5,000 per house are repayable over a period of 20 years. The scheme was transferred to the State sector beginning from the Third Five Year Plan. But the progress under the scheme has been halting because the machinery for proper administration does not exists. Also there has been no coordination between the scheme and other complementary projects for rural development. To the end of March 1979, loans for 1,00,574 houses had been sanctioned under the scheme against which 67,083 houses were completed making an average of 3045 houses per year. The scheme has been discontinued since 1969 in a number of States for want of Central financial assistance. It needs to be mentioned in this context that the Village Housing Project Scheme which was conceived as an integral part of the Community Development Programme ran into difficulties because of deficiencies in the rural sector which remained economically, socially and institutionally underdeveloped for the effective operation of a housing finance system which was designed on the principle that, while government will finance housing loans, the rural households must pay the full cost of housing over time. The scheme by-passed the poor who had no means at all to meet the capital cost of housing construction.

The Plantation Labour Housing Scheme was introduced in 1956 to help plantation owners to fulfil their statutory obligation under the Plantation Labour Act, 1951 to provide rent-free accommodation to eligible plantation workers. Under the Rules, the employers have to build houses for at least 8 per cent of the resident workers every year until all of them are adequately housed in rent-free dwellings. Initially, it was wholly a loan scheme envisaging grant of loans to the planters through the State Governments to the extent of 80 per cent of the approved ceiling cost, the balance

Water proofing the wall with coal-tar

of 20 per cent having to be contributed by the planters themselves. Subsequently, on the recommendation of the Working Group on Plantation Labour Housing set-up by the Ministry of Labour, the Scheme was modified with effect from 1st April, 1966 providing for a loan of 50 per cent and a subsidy of 25 per cent of the approved cost of the house subject to certain prescribed ceilings, the balance 25 per cent having to be met by the planters themselves. The revised scheme came to be known as the Subsidised Housing Scheme for Plantation Workers.

Under the Fourth Plan, the Scheme was transferred from the State Sector to the Central Sector and the quantum of subsidy was enhanced to 37.5 per cent. The planters are now required to find only 12.5 per cent of the capital cost from their own resources. Cooperative societies of plantation workers are also eligible for financial assistance to the extent of 90—65 per cent as loan and 25 per cent as subsidy. Provision for financing the scheme is now made in the Central budget and funds are made available to State Governments outside their plan ceilings. This scheme is now being implemented in Assam, Tripura, West Bengal, Karnataka, Kerala and Tamilnadu. To the end of March 1979, 25,348 houses had been sanctioned under this scheme out of which 16,088 houses were completed.

With the discontinuance of the Village Housing Project Scheme in most States, the only government plan for rural housing at present being implemented throughout the country is the scheme for provision of house-sites to landless workers in rural areas. The scheme assists the governments of state and Union Territories to provide developed house-sites, free of cost, to families of rural landless workers who do not already own house-sites or houses or huts built on land of their own. On the house-sites so provided, the workers are expected to build houses/huts with their own resources or with such assistances as can be provided by the state governments and other voluntary organiations. Priority is to be given to Blocks where there is a sizable concentration of landless persons belonging to the Scheduled Castes|Tribes. The scheme is being implemented in 18 states, and six Union Territories. Since the inception of the scheme, in October 1971 to the end of June 1979, the State Governments had allotted 76.9 lakhs house-sites to the landless labour families The Five-Year Plan (1978—83) has made a provision of Rs 500 crore to give financial assistance to acquire plots and build houses under the Revised Minimum Needs Programme.

One Lakh Houses Scheme

But it has been found that provision of mere house-sites is not enough unless availability of finance for construction of houses on such sites is ensured. Some of the States like Kerala and Karnataka have made a beginning by launching massive rural housing schemes supported by public subsidy to enable the rural poor to building houses of their own. A notable feature of the One Lakh Houses Scheme of the Government of Kerala is the method of financing the scheme under which resources were raised from different sources. Donations were collected from the people to the Chief Minister's Housing Fund at the State level, to the District Collector's Housing Fund at the District level and to the Panchayat Committee's Housing Fund at the Panchayat level. But it was felt that the allottees, if required to pay the cost of houses even over a long period extending from 20 to 30 years, will not be able to create sufficient savings out of their income to repay the housing loan. The important question before the Government, therefore, is whether houses should be given free of cost or a portion of housing cost alone should be realised from the allottees. Ultimately, the Government has decided to construct and distribute houses to the beneficiaries free of cost. In view of the financial constraints, however, it is decided that the cost of construction of each house should not exceed Rs. 1250 to 1500.

Janata Housing Plan

Karnataka is the first state to have thought of a scheme to construct houses for the weaker sections in the rural areas on the sites distributed under the scheme for allotment of house-sites to landless workers. Accordingly, in 1973-74 the People's Housing Scheme popularly known as 'Janata Housing Scheme' was introduced as a follow up of the programme of distribution of house-sites exclusively for the rural poor. Under the People's Housing Scheme, the estimated cost of a house is Rs. 2,500 out of which government finance is Rs. 2,000—1,000 in the form of loan and Rs. 1,000 as subsidy. The loan is interest free and, repayable in equal monthly instalments over a period of 20 years. The balance of Rs. 500 is being met by the beneficiaries in the form of cash, kind or labour. A decision has since been taken to enhnace the subsidy to Rs. 1,500 by doing away with the beneficiary's contribution altogether. The Karnataka Government have also taken up an experimental Low Cost Housing Scheme introduced in 1976-77 under which the beneficiaries are supplied roofing materials, windows and doors worth Rs. 1,000 per family. In addition, the beneficiary is sanctioned Rs. 250 in two instalments to meet the erection charges. The beneficiary is expected to construct the walls with his own resources. The total financial assistance of Rs. 250 is treated as subsidy. The idea behind the scheme is that even if the surrounding walls collapse the roofing should remain pucca and wall could be re-built as and when the economic condition of the beneficiary improves.

Further, to cater to the housing needs of the poorest among the rural households who are not in a position to contribute their share under the People's Housing Scheme and the Experimental Low Cost Housing Scheme, State Governments introduced a scheme for the construction of hutments under which materials worth Rs. 250 are supplied to each family and the beneficiary is expected to complete the hut with his own labour. The dimension of the hut is 180 sq ft. The objective of the scheme is to provide minimum temporary shelter and in doing so extend the benefit to as wide a section of the poor as possible.

As already mentioned, the beneficiaries under both the housing and hutment schemes are the allottees under the house-sites programme. The benefits of the People's Housing Scheme, Experimental Low Cost Housing Scheme and Hutment Scheme are extended only to the houseless in the rural areas and to those households who have an income not exceeding Rs. 2,000 per annum.

What is unique about the People's Housing Scheme of Karnataka is the policy decision taken by the State Governments to provide a liberal public subsidy to house the rural poor based presumably on the consideration that the poorest among the rural house-holds have no means to provide towards the capital cost of a house out of their own resources.

A review of the progress of the existing rural housing schemes of different state governments suggest that Government finance for rural housing is too inadequate for the on-going programmes for housing the rural poor. It must be appreciated, however, that Government efforts at any time can only have marginal impact on the acute problem of rural housing. In a situation in which bulk of the rural households do not have the means to pay towards the cost of a house, the solution could either be for the Government to take steps to bring down cost of housing construction within the paying capacity of the rural houses or alternatively, to provide public subsidy to enable the deserving poor to building houses of their own.

Need For Liberal Rural Housing Scheme

In policy terms, India's development planning has considered the improvement of housing conditions as a task of enormous dimension and linked its expansion with the increase in rural prosperity. The rural housing programme is, therefore, viewed not as an isolated objective but as a part of the comprehensive rural development programme of improving agriculture production, cooperative endeavour, rural water supply, drainage, sanitation, village roads and welfare programme for the weaker sections of the community. Such an approach to develop rural housing implies the creation of necessary organisational and institutional base to undertake the coordinated implementation of rural housing programmes. While creating an appropriate organisational framework for the execution of rural housing schemes, certain basic facts have to be kept in view. The rural sector is deficient in the elements essential for an effective operation of the housing finance system The socio-economic conditions in the rural areas differ widely from those in the urban areas. A conventional housing finance system under which mortgage credit is provided as in the case of urban housing schemes is unsuitable to the rural areas and more so to financing housing schemes meant for the rural poor. It needs to be recognised that the most needy among the rural poor have no collateral security to offer to qualify for a housing loan. They are also not able to fulfil current eligibility requirements for a housing loan by making initial contribution in cash, kind or labour as many of the current housing schemes stipulate. In such a situation, we need to evolve a rural housing finar system which provides for : (1) liberal eligibility quirements (2) nominal or low initial payments (long repayment periods (4)liberal interest subsid (5) improved credit-worthiness to ensure that ho ing loan repayments approximate increases in hou hold incomes anticipated from development progra mes and (6) timing of repayments to coincide w harvesting and marketing seasons.

Need for a Specialised Institution

There is at present a wide credit gap in financi the rural housing schemes of the State Governme most of which do not have adequate resources undertake large-scale rural housing programmes. T acuteness of the problem of inadequate housing cre can be traced to the absence of an institutional b for financing rural housing programmes. The exist housing agencies including Housing Boards have l gely been pre-occupied with implementing urt housing schemes, their role in financing rural hous schemes being extremely limited. Specialised insti tions for rural housing therefore, need to be est lished It may be mentioned, in this context that Ministry of Works and Housing Government of Inc set up a Study Group on Rural Housing in 19 which examined the problem of Rural Housing finai in all its aspects and recommended setting up separate Rural Housing Boards/Corporation w sizeable capital contributed by the Central and St governments, L.I.C., the Nationalized Banks, E ployees Provident Fund and Special Insurance Fu to finance rural housing programmes throughout country. This suggestion of the Study Group ne serious consideration.

Two-room houses built at Sukalia village in Indore district, M.P., have galovinised iron sheet roofing.

Financial Institutions

Prominent among the existing institutions wh are engaged in mobilising finance for rural hous are the L.I.C., the HUDCO, and the Coopera Housing Societies.

The Life Insurance Corporation of India provi finance for rural housing through the Apex Coop tive Housing Finance Societies. The L.I.C. loans rural housing are guaranteed by the State Governm concerned and the housing loans advanced by Apex Societies to the primary societies are covered the Group Life Insurance Scheme of the corporati

Contd on page 29.

Peoples' Housing Programme

R. V. Dadibhavi

INDIA BEING a third world country, despite its conscious tireless striving to feed, cloth and house the teeming millions since the dawn of independence, has not been fully successful. Of the three essential requisites of civilized existence, housing has been receiving relatively low priority, of course for certain obvious economic constraints. In India where more than 36 crore population is condemned to live below the poverty line, millions of them do not have capacity to build houses on their own accord, and many more millions cannot even subscribe a small portion of the cost of constructions under subsidised housing schemes. The available data as regards the shortage of housing in the Urban and Rural areas are neither reliable nor satisfactory. However, the Plan Draft indicates that the current housing shortage in Urban areas would be of the order of 6 crore 20 lakh houses. It expresses utter dissatisfaction in respect of rural housing. It is essential that at least 12 million landless labourers do not even own their own house sites.

To face the challenge posed by the perennially growing problem of housing, what we need is a massive programme of housing which is not only Need-based but also Resource-based. Any scheme of rural housing to be realistic must invariably take into account the climate of the region, occupational needs, size of the household, income levels, socio-cultural patterns etc. In addition, such a scheme should not lose sight of the availability of open space, building materials and financial resources.

Inspite of its highest ideals of social welfare, the government of India has not been able to implement an ambitious programme of housing because of certain socio-economic constraints. The draft plan, inter-alia makes provision for the allotment of house sites to 40 lakh landless labourers as a part of the Minimum Needs Programme.

R. V. Dadibhavi is lecturer in Economics at Shri Kadasidheshwar Arts College and H.S. Kotambri Science Institute, Hubli

Janata Scheme in Karnataka

In consonance with the National Housing Policy, the government of Karnataka launched its "People's Housing Programme" in the year 1973-74, popularly known as "Janata Housing Scheme". Under this scheme, houses with a built area of 270 sq. ft. constructed on sites measuring 60'x40' are alloted to the houseless rural poor. The average cost construction of each building is Rs. 2,500. Twenty per cent of the cost (Rs. 500) is to be contributed by the beneficiaries either in the form of money payment or in the form of voluntary labour. The balance of cost of Rs. 2,000 if financed partly (50 per cent) by interest free loan to the beneficiaries repayable over twenty years and partly (50 per cent) by subsidy. The pattern of houses built under the scheme is more or

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less the same all over the state. Each house has a small kitchen and a small living room.

A survey was conducted during March 1979 with the ultimate objective of getting an insight into the Economics of the Janata Housing Scheme in Hubli Taluka. In all the 28 villages of the Taluka, as at the end of March 1979, totally 713 houses were constructed and allotted to the rural houseless, under the Janata Housing Scheme. The investigation made by the students studying in the final year of B.A. (Economics Major) in Shri Kadasiddheshwar Arts College, Hubli. In all 48 students were drafted Initially 40 per cent of the houses (300) were selected for investigation on random sampling. But on scrutiny, 124 had to be rejected in view of their incomplete nature. As such the sample size got reduced to 176, which works out to 25 per cent of the houses in every village under study.

In the 47 villages selected for random sample survey, 12,584 households were interviewed. Total population involved in the random survey was 75,978. The number of houses available for survey was 11,010. Of them 713 houses belonged to Janata category. It was noticed that there was no correlation between the houses constructed under the Janata Scheme and the actual shortage of houses. It was also revealed from the statistics collected that the average size of the house hold varied from 6 to 7.

Two-room houses with varandah, have A.C. sheet roofing.

Sample Size

According to another part of the survey, the study was devoted to sample size of Janata houses. According to this study, in 28 villages selected for survey, 694 Janata houses were actually in occupation. Of them 176 houses were selected for random sample survey.

The survey included a study of allotment of houses based on the annual income of the beneficiaries. According to the study annual income of the beneficiaries was divided into different groups like less than Rs. 500, Rs. 500 to Rs. 750, Rs. 750 to Rs. 1000, Rs. 1000 to 1250 and so on. The statistics also revealed that 70 per cent of the houses, were alloted to people having an annual income of Rs. 2,000 and less and 30 per cent to those with more than Rs. 2,000.

The data collected during the survey gives us the occupation-wise distribution of Janata Houses. The survey showed that 65 per cent of the houses were alloted to the landless agricultural labourers, 13 per cent to the agriculturists, 6.8 per cent to people engaged in trade and commerce, 7.9 per cent to people engaged in service sector and the rest of 9 per cent to the Self-employed people such as pot-makers, carpenters, washermen, barbers, gold-smiths, mine workers and the like.

Size of Households

The survey also furnishes information about the allotment of houses viewed from the point of view of the size of households. 70 per cent of the beneficiaries were households with 6 and less than 6 persons a house-hold, and 30 per cent of them had 7 and more than 7 persons a household, the maximum number being 10.

The survey also depicted the suitability or otherwise of the houses to the beneficiaries viewed from the size of their income, occupation and the size of households.

Judged from the size of income of the beneficiaries, 62.5 per cent of them were satisfied with the accommodations, 37.5 per cent of them were not satisfied. The dissatisfaction was because the people with relatively higher incomes preferred to have more spacious houses than the houses alloted to them. Judged from the point of occupational suitability of the houses so constructed they were not suitable to 27.3 per cent of the occupants. Their unsuitability was due to the fact that agriculturist wanted some more room to shelter livestock and some additional space to store the fodder and husk; the barber wanted an additional room to carry on his trade; the carpenter needed some more space for his workshop; and the blacksmith required additional structure to run his cottage industry. If over crowding was to be judged on the basis of the criterion of the number of persons per room, then the Janata Houses under the Study with 6 persons per room were more crowded when compared to the State average of 5.52 in rural areas. It is this over crowding and its consequent congestion which made 50

per cent of the household to express their dissatisfaction over the accommodation.

The survey also covered the castewise distribution of houses, it revealed that the major beneficiaries under the scheme were Muslims. Before alloting the houses, every care was taken to accommodate Harijans and other economically backward communities. A heartening feature of the scheme was that it made an attempt to sow the seeds of casteless society by alloting the houses in such a way as to see that people of diverse castes lived together.

Durability of Janata Houses

One of the disquitening features noticed is that more than 78 per cent of the houses may last for a little over 10 years. Only 3.5 per cent of them may last for more than 25 to 30 years. This finding is based on the present condition of the houses, the quality of material used and the methods of construction employed, besides the opinion of the occupants themselves.

Where were these beneficiaries staying before allotment? According to the survey, 21 per cent of the houses were alloted to persons who already possessed houses of their own. Of them 15.9 per cent were living in old houses and 5.1 per cent in small houses. 79 per cent of the houses were alloted to those who classified under various categories such as people living in joint-families, houses of their relatives, huts, rented houses etc. in other words, houseless.

The study also revealed the fact that 18.8 per cent of the houses were alloted to migrants without taking into consideration the period of their stay-past as well as future.

The Janata Housing scheme to be more meaningful should be more need-based; the pattern and size of the houses cannot be decided independent of the size of income of the dwellers, the size of their households, and their occupational needs. The people with relatively higher incomes and who volunteer to contribute a part of the cost of construction to get better accommodation should not be treated on par with the low income groups. The housing scheme must be discriminative in its approach so as to be need-based. Further more, the houses could be reasonably spacious to avoid the danger of congestion.

In India where millions of people are condemned to live in shanties and slums, the government cannot afford the luxury of alloting subsidised houses to those who can build houses on their own. The authorities concerned with the allotment of houses under the Janata Housing Scheme could take all possible measures to see that the houses are alloted to those for whom they are really meant.

Our desire to house more people should not make us ignore the 'durability' aspect of the houses. The houses built for the economically weaker section must be durable enough to free them from the problem of housing atleast for two or three generations. The policy which aims at providing housing facilities to the majority of the poor irrespective of the durability of the houses, is no doubt good politics, but not good economics.

The problem of housing the migrants warrants a special approach. Instead of alloting houses built under the Janata Housing, it is desirable to accommodate them in community halls (structures of temporary or permanent nature) during their short stay.

If efforts are made to allot houses in such a way as to see that people of different traits and castes are made to live together it would go a long way to help in the establishment of a casteless society in the years to come.

Above all the Janata Housing Scheme cannot afford to ignore the urgency of providing certain basic needs like protected drinking water, electricity, lavatories and community halls, which have very much to do with the over-all health and welfare of the village communities. □

Novel Features of Rural Housing Schemes

Anand Yogi

THE main thrust of the programmes from the Fifth Plan and onwards in our country is directed towards ameliorating the conditions of the backward sections of the society specially those in the rural areas The construction activity in rural areas is, proposed to be promoted on the basis of (i) aided self-help, (ii) propagating the use of local building materials suited to the economic conditions of the villages, (iii) providing house-sites to landless labourers in rural areas, (iv) sponsoring Rural House Building Cooperatives, if feasible (v) augmenting the programmes of State Housing Boards for construction in Rural areas, (vi) expanding the activities of HUDCO by gearing it up to meet the expanding demand and (vii) vigorous implementation of the village Housing Project Scheme and so on.

Rural Housing Schemes

With the above objectives in view, the Government of India as well as State Governments have taken up several rural housing schemes primarily to cater to the needs of low income groups and specially the rural poor. The novel features of the schemes in brief are mentioned below.

Under this scheme which was introduced in 1957 loans were provided to individuals and their cooperatives for the construction and improvement of houses. The amount of loan is restricted to 80 per cent of the cost of construction, subject to the maximum of Rs. 5,000 per houses where the cost of construction is less than Rs. 2,000, the loan assistance can be raised from 80 per cent to 90 per cent. It is repayable at low rate of interest in easy instalments spread over a period of 20 years In such cases the total cost of house should not exceed Rs. 8,000. Laying of streets and drains, to improve environmental conditions in the villages is also included in the scope of the scheme.

The scheme is implemented by the State Governments and Union Territory Administrations who are competent to frame rules for its administration.

Up to 31st March, 1979, the construction of 10,45,035 houses had been sanctioned, of which 7,98,101 have already been completed. The total amount sanctioned for this scheme was of the order of Rs. 25.09 crore.

In order to assist the rural people in building houses at cheap cost, extend the durability of the houses, research and development work has been taken up by the National Buildings Organisation. Improved use of local materials and economic designs for the houses have been evolved, adoption of which is being widely propagated Social and Economic studies and surveys have also been undertaken to ascertain the rural housing needs and resources. The nine Regional Rural Housing Wings of the NBO, set up by the Ministry of Works and Housing are also associated in the implementation of the scheme at the regional level.

Housing the Plantation Workers

The Plantation Labour Housing Scheme was introduced in April 1956. The scheme which was included in the State Sector originally provided for grant of loan assistance only to the planters to the extent of 80 per cent of the approved cost of houses. The balance 20 per cent was to be contributed by the planters. The Scheme was modified from 1st April, 1966, so as to provide subsidy in addition to loan. Accordingly

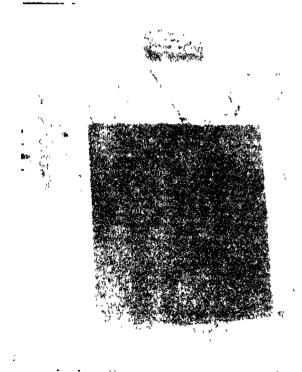
Anand Yogi is Deputy Director, National Buildings Organisation New Delhi.

the central financial assistance was provided to the extent of 75 per cent of the cost of houses—50 per cent loan and 25 per cent subsidy, the balance 25 per cent to be borne by the planters.

The scheme was transferred from the State Sector to the Central with effect from April 1970 1970 with a view to relieving the States of the financial burden for implementation of the scheme, as they were finding it difficult to provide adequate funds for the purpose out of their own resources. Since plantations play a vital role in the growth of national economy, the Central Government decided to meet 87½ per cent of the expenditure in the shape of 50 per cent loan and 37½ per cent subsidy under the scheme with effect from 1st April, 1970. The scheme is, at present, being implemented by the Governments of Assam, Tripura and West Bengal in the Eastern Region and Karnataka, Kerala and Tamil Nadu in the Southern Region.

Prior to 1-4-70 the concerned State Governments sanctioned the construction of 2,112 houses only since the inception of the Scheme in 1956 However, at present, it appears that the State Governments are going ahead with the implementation of the Scheme vigorously. Up to March 1979 sanction for the construction of 25,348 houses was accorded and out of these construction of 16,088 houses had been completed.

House Sites for the Landless Workers

The Government of India, Ministry of Works and Housing introduced in 1971 a scheme to provide House-sites to the landless workers in rural areas The scheme provides for hundred percent grant/assistance to the state governments for acquisition of land and its development for allotment of house-sites to landless workers in rural areas The house-sites are provided free of cost to those landless workers who do not own a house-site or a built up house or a hut on the land of their own. The allottees are expected to build houses/huts thereon with their own resources. Since April 1974 the scheme has been transferred to the state sector and funds are provided by the Central Government in the form of loans and grants.

In most of the States, the families eligible under the scheme have been identified and in a number of States allotment of house-sites have been made to them. Upto June 30, 1979, out of 116.50 lakh families identified, 76.94 lakhs have been allotted the house-sites and of them 15.58 lakh already developed.

Based on the minimum needs concept, keeping in view the cost limitations, the NBO has suggested a suitable house design for the plot of the size 6m×13.7m (100 sq. yds.) for the landless agricultural workers. The same with slight modifications has been adopted at some places.

In addition to the schemes included for rural areas under social housing as a part of ameliorative measures for the socially weaker sections of the society, the Government have undertaken subsidised housing for scheduled castes/tribes and other backward classes and handloom weavers. Some State Governments have also launched special schemes involving mass participation to construct houses for the rural poor in addition to granting them house sites.

Split bamboos are used for construction of reinforced mud walls.

'One Lakh Houses Scheme'

The 'One lakh houses scheme' implemented by the Government of Kerala is a unique mass housing project carried out in the rural areas. This scheme was specially designed to benefit the poorest of the poor who had not benefitted even from the 'Land Reforms Legislations' of the State. It is in fact a combination of two independent schemes correlating the Central Government Scheme of 'Provision of house-sites to landless workers in rural areas' and the Kerala Government Scheme of 'Constructing pucca houses on these house-sites' The novel features of the scheme are :—

(i) The materials for building these houses and labour required for the same were to be found through the cooperative efforts of the Government and the people of the State ;

(ii) The Scheme which was estimated to cost about Rs. 30 crore was taken up for construction without proposing even a single additional staff, right from the Secretariat to the Panchayat level ;

(iii) The Scheme was implemented throughout the State simultaneously and not in stages ; and

(iv) A number of departments like Panchayat Revenue, PWD, Forest, etc. were involved and with their co-operation and active participation, the scheme has been implemented by the local people.

Under this scheme though the target has not been achieved, the construction of 57,000 houses was completed and the houses were handed over to the beneficiaries. The scheme for construction of houses was discontinued early in 1976 and about 33,000 house-sites purchased under the scheme where house construction has not been taken up by the Government were also handed over to the beneficiaries with the instructions to constructed houses on those sites at their own cost.

The Government of Kerala has now been thinking of taking up a massive housing scheme according to a phased programme in order to solve the problem within a period of 10 years. But before embarking upon any massive housing scheme, the Government has constituted a committee of experts, to make an objective evaluation of physical, social and economic impacts of the 'One lakh houses scheme', with which NBO has been associated.

Sites and Services

The special feature of the sites and services and permanent programme in Andhra Pradesh is the adoption of a two pronged approach—'sites and services' for those who are not in a position to avail loan assistance, and 'permanent housing' for those who can. Another important feature of the scheme is that attempt be also made to provide insurance cover against natural calamities for the houses so built. Simultaneously the programme is being effectively dovetailed with 'Food For Work Programme', rural development and welfare schemes for weaker sections and so on.

The 'sites and services programme' envisages development of house-sites, provision of services such as roads, drains, drinking water and street lighting. The scheme has a provision of assistance by way of building materials worth Rs. 200 and of foodgrains worth Rs. 200.

In the year 1979-80 the scheme aims to benefit 10,000 persons in each district with an outlay of Rs. 9.2 crore.

In addition 2,054 houses have been taken up for construction in all the districts with the loan assistance from the General Insurance Corporation under the Permanent Housing Programme.

Housing in Cyclone-Prone Areas

Recognising the need to provide permanent shelter which can withstand the fury of the cyclones, gales, the Government of Andhra Pradesh has embarked on a massive housing programme in June 1979. In the first phase of the programme it is proposed to take up the construction of four lakh houses in the next two years in collaboration with the Andhra Pradesh State Housing Corporation.

The N.B.O. and its Regional Rural Housing Wing located at Bangalore have offered to provide technical guidance and assistance to the State Government in this task.

Janata Housing Scheme

The Government of Karnataka launched a 'People's Housing Scheme' popularly known as Janata Housing Scheme in 1973-74 as a follow-up of the programme of distribution of rural house-sites, exclusively for the weaker sections.

Under this scheme houses with an estimated cost of Rs. 2,500 each are being constructed either departmentally or by the beneficiaries themselves, for the allottees under the rural house-sites programme. The special feature of the scheme is that the principles of the participation, self-help and Government assistance to weaker sections are harmoniously blended together. To explain this further out of Rs. 2,500 Rs. 1,000 is interest free loan, and Rs. 1,000 is subsidy, the balance of Rs. 500 is being met by the benecjaries in the form of cash, kind or labour.

The type designs and specifications suited to the local conditions were evolved by a committee with Chief Engineer (C&B) as its convener. The NBO Regional Rural Housing Wing located at Bangalore is maintaining close association with this committee engaged in the task of evolving designs and specifications.

The Karnataka Government proposes to build over eight lakh houses under this scheme in the next five years. Since its inception, 88,952 hou'es had already been completed by september 1978.

The N.B.O. at the instance of the State Government took up the evaluation of the Scheme. The report for this study is under finalisation. As a result of the field study it was observed that the beneficiaries were not in a position to pay Rs. 500, which was their contribution, on account of abject poverty. This observation was brought to the Secretary (housing) Karnataka in a discussion after the survey.

It is worth mentioning that the Government of Karnataka has recently announced that the cost of the house of Rs. 2,500 under this scheme shall be met out by giving Rs. 1500 as subsidy and Rs. 1000 as loan and thus doing away with the beneficiary's contribution of Rs. 500 in the scheme.

The Government of Karnataka have also introduced in 1976-77 two more new schemes namely (i) Experimental Low-Cost Housing Scheme, and (ii) Huts Scheme, for the rural poor. By the end of September 1978, 17,129 low cost houses under the former scheme and 35,670 huts under the latter scheme have been completed.

Low Cost Houses For Harijans

Uplift of socially and economically weaker sections of the society has been one of the basic objectives of our developmental plans. With these objectives in view, the Government of Tamil Nadu has recently set up the Harijan Housing Development Corporation to provide houses for the Harijans in the State. The Corporation has been entrusted with the work of constructing low cost-houses for Harijans in various districts of the State and a scheme with an outlay of Rs. 3 crore has been sanctioned. Under he scheme 5,000 houses with unit cost of Rs. 6,000 and plinth area of 22.3 sq.m. are to be constructed.

It is also proposed to take up 1,890 quarters for fishermen on the basis of the same plan at a total cost of Rs. 1.12 crore.

In these constructions, cost reducing technique propagated by NBO, have been adopted and also the secondary species of timber as advocated by NBO are being used for all doors and windows.

Houses in villages are largely built through self help and mutual aid. This informal way of corporate village life needs to be harnessed by forming rural co-operative housing societies to tackle the colossal problem of improvement of housing conditions in the rural areas. House construction through co-operative societies in rural areas is gaining momentum in our country. One such scheme recently introduced, is the rural housing scheme, through co-operative societies in Tamil Nadu.

The Government under this scheme propose to construct one lakh houses in the rural areas during the plan period 1978—83.

In an estimated cost of Rs. 3,000 per unit with plinth area of 18.6 sq. m. (200 sq. ft.), a Government subsidy of Rs. 600 (20 per cent of the cost of building) will be allowed to Harijans and as well as to those non-Harijans who come forward to construct houses in the habitations predominantly of the Harijans besides interest subsidy.

The National Co-operative Housing Federation can play more effective-role in providing technical advice and guidance for implementation of rural co-operative housing projects, taking advantage of the expertise available with NBO and its Rural Housing Wings.

Uttar Pradesh

As a corollary to the scheme of providing house-sites to the landless agricultural workers in rural areas, this scheme of the Government of Uttar Pradesh proposes to undertake construction of houses on the allotted house-sites. The special features of the scheme are :—

(i) Houses shall be constructed in clusters of at least ten houses in the close proximity of the village habitation,

(ii) At least 50 per cent of the beneficiaries under this programme would be Harijans ;

(iii) Block Development Officers would be required to assist the beneficiaries in the procurement of building materials,

(iv) Those beneficiaries who undertake to build up houses on the basis of self-help would be given preference,

(v) Each beneficiary shall be eligible for a grant of Rs. 1,000 from the State Government

The type designs for the houses are being prepared, keeping in view the geographical environment and availability of local building materials, by Uttar Pradesh Development Systems Corporation Ltd. with which the National Buildings Organisation is also associated. In case the beneficiary wishes to have some alteration in the specification or additions to the prescribed design thus resulting in the escalation of the cost, the State Government will assist the beneficiary to obtain loan from the bank. The Government grant shall, however, be restricted to Rs. 1,000 only.

On the basis of the designs of clusters of demonstration houses put up by the Ministry of Works and Housing, Regional Rural Housing Wings and the designs evolved by NBO, some State Governments have taken up the work of putting up such clusters under their massive rural housing programme. In Uttar Pradesh, the NBO was engaged in the construction of 247 houses in the nine villages of Ghazipur District The Ministry of Works and Housing has recently set up a Rural Housing Wing at Varanasi which is making efforts to enter into an agreement with the Harijan Evam Nirbal Varg Avas Nigam, UP for rendering assistance in the construction of low cost houses for Harijans and other economically weaker section of U.P.

The Government of Rajasthan have launched a programme during 1978-79 for providing housing to the rural poor. Under the first phase of the programme, the Government proposes to construct 1,200 houses at a cost of Rs. 60 lakh in the eleven districts of the State. The novel features of the scheme are :—

(i) The construction of the houses under the scheme could be undertaken by any of the agencies namely (a) Gram Panchayat (b) Co-operative Societies of the beneficiaries (c) Other Co-operative Societies (d) Social Service Organisations recognised by the District Magistrate (e) Beneficiary, subject to the approval of the District Magistrate ;

(ii) The beneficiaries under the scheme would be identified by the Government and a loan of Rs. 5,000 at the interest rate of 9 per cent per annum repayable in 25 years in 50 half yearly instalments shall be made available The type design as suggested by NBO for these houses has been prescribed and it is expected to cost about Rs. 6,600 leaving thereby a gap of Rs. 1,600 which would be the contribution of the beneficiary in cash or kind

(iii) The ceiling cost of such house shall be Rs. 8,000

Rural Housing Programmes in Other States

In addition to the schemes undertaken by the States mentioned above, various other rural housing schemes are being implemented in some other states such as Punjab, West Bengal, Assam, Haryana, Madhya Pradesh, Orissa, Gujarat, Maharashtra and others, Brief information on some of these schemes is as follows :—

The Housing Development Board of Punjab has taken up the construction project of 4,000 houses in the various districts of the State for Harijans and landless agricultural workers. By the end of August, 1979, 551 houses have been completed. The NBO actively collaborated with the Punjab Housing Development Board in evolving a suitable design incorporating improved use of locally available materials.

The Government of West Bengal has taken up Rs 2.1 crore project for the construction of over 1,900 houses in the rural areas in different districts. Different designs prepared by the Regional Rural Housing Wing of NBO and its liaison Cell are being adopted.

The Government of Gujarat has formulated a scheme of construction of houses on the house-sites allotted to landless agricultural workers in rural areas. The novel feature of the scheme is that the cost of a house under the scheme is Rs. 1,800 which is to be met by a bank loan of Rs 1,000, Government assistance by way of subsidy of Rs. 400, contribution by the District Development Authority and/or by voluntary agencies to the tune of Rs 250 and contribution by way of manual labour to the tune of Rs. 150.

The Government of Haryana has launched 'Grameen Janta Housing Scheme' in 1976 to provide financial assistance to the landless agricultural workers to build houses on the house-sites allotted to them. The cost of the construction of a house was originally estimated to Rs 3,700 but due to rise in the cost of construction, the total cost of a house has now been revised to Rs. 4,950. The novel feature of the scheme is that the Government has persuaded the Banks to finance 80 per cent of the cost of construction in the shape of loan and the remaining 20 per cent is to be contributed by the beneficiaries in the shape of cash or labour The amount of loan sanctioned by this time was of the order of Rs. 62.5 lakh □

House Building Programme in Kerala

S. Krishna Iyer

THE FIRST All India Conference of Housing Boards held at Trivandrum in October 1979 brought to the fore the problems confronted by various states in the sphere of house construction. The conference emphasised the necessity for a Central legislation to clothe the Housing Boards with adequate powers to carry out different housing schemes. It also recommended the drawing up of a national housing policy which would help secure assistance from financing agencies for housing efforts Though this conference dealt with the difficulties experienced in Kerala in the house construction front, it could not bring to focus the acute scarcity of dwelling places and land sites suitable for house construction in Kerala.

The housing problem is extremely acute in Kerala owing to the high population pressure in the State. Hence providing housing facilities to the rapidly increasing population in Kerala has become extremely difficult. The 1971 census placed the total number of occupied residential houses in Kerala at 34.18 lakh and the number of households at 35.43 lakh. These figures show that there was a shortage of 1.25 lakh houses in the State in 1971. As the population of the State increases by more than five lakh every year nearly one lakh houses have to be constructed additionally every year to provide for the increasing population. It may be noted that house construction is mainly an activity of the private sector and about 70,000 new houses are completed every year in the State, a vast majority of them by private individuals without any help from Government. Even after taking into account this annual increase, the gap widens by 30,000 houses every year. Thus to provide for the increase in population from 1971 to 1980 alone 2.7 lakh more houses would be required which, when added to the already existing shortage of 1.25 lakh houses, would raise the total shortage to around four lakh houses.

Nearly 35 per cent of the existing households in Kerala are below the minimum level of housing. These lack even the minimum comforts and amenities of a house. The materials used for the construction of most of these houses are mud, leaves, grass and straw. In the urban areas there are a large number of slums with deplorable conditions of housing and sanitation. Even such essential amenities as water and light are lacking in most of them. If a small house of two rooms is taken as the minimum requirement of a family of two adults and five non-adults, ten lakhs of the existing houses have to be reconstructed or replaced over and above constructing four lakh new houses to remove the existing shortage. Thus the total number of additional houses required at present will be around 14 lakhs. This would call for an investment of the order of Rs. 420 crore even at the low rate of Rs. 3000 per house. With the limited financial resources at its disposal the State Government is not in a position to undertake such a massive house construction programme. However the Government is fully aware of the magnitude and urgency of the problem.

The population of Kerala grows in Geometric proportion and renders the housing problem more acute. Here, the author vividly describles the good strides made in alleviating the problem by launching various schemes like one lakh houses, plantation, Labour Housing, Village Housing Project and so on.

State Sponsored Programmes

The state sponsored housing programmes in Kerala had their beginning in the First Five Year Plan with the construction of 285 tenaments under the settlement scheme for landless agricultural workers. In the initial stages of the plan era, schemes under housing for industrial workers and low income groups were taken up. The programme was further expanded with the introduction of the schemes like Plantation Labour Housing, Village Housing Project, Middle Income Group Housing and Slum Clearance and Slum Improvement. During the Second Plan period considerable progress was achieved under the low income group housing scheme which has become very popular in the State. The slum clearance scheme, which was taken up as a centrally sponsored item, aimed at the eradication of the slums in the urban areas and providing better facilities to the slum dwellers. During the first three Five Year Plans and the Annual Plans a total expenditure of Rs. 472.23 lakh was incurred on housing programmes. From the inception of the Fourth Five Year Plan, the Central Government integrated the housing scheme for industrial workers with that for the weaker sections of the community. But in Kerala the Subsidised Industrial Housing Scheme was continued during the Fourth Plan period, without integrating it with the housing scheme for the weaker sections of the community. The latter was treated as a spill-over scheme in the Fourth Plan and annual

S. Krishna Iyer is Joint Director in State Planning Board at Trivandrum.

provisions for this purpose were set apart from the allotment for the housing scheme for agricultural labourers. The implementation of Industrial Workers' Housing Scheme and housing scheme for weaker sections has not been quite successful in Kerala. This is mainly due to the low ceiling cost of the building fixed under the rules. The Village Housing Project has also not made substantial progress in the State. The Low Income Group Housing Scheme and the Middle Income Group Housing Scheme are financed by the Life Insurance Corporation of India and implemented by the Board of Revenue through the District Collectors. Under these schemes loans are granted to individuals for the construction of houses under the rules framed for the implementation of each scheme. The main difficulty in the implementation of these schemes is paucity of funds. Under the subsidised industrial housing scheme 936 houses were built during the Fourth Plan period. Though the target for the settlement of landless agricultural labourers on Government lands was 5,000 families, actually 1,783 only were settled during the Fourth Plan period. The shortfall was due to non-availability of unoccupied Government lands. Under the Low Income Group Housing Scheme 1,139 houses were constructed against the Fourth Plan target of 2,350. The number of houses constructed under the Village Housing Project was 2089 as against the target of 3,717. Under the middle income group housing scheme 379 houses were constructed against the target of 553. In the Fourth Plan, even though the State sector outlay for housing was only Rs. 230 lakh, the actual expenditure was Rs. 453.34 lakh.

Housing the Rural Poor

In the Fifth Plan an amount of Rs. 19.14 crore was set apart in the State sector for the implementation of various housing programmes. These schemes were aimed at improving the housing conditions of the rural poor especially the landless agricultural labourers and other weaker sections of the community. Due emphasis was also given for provision of housing facilities to low and middle income groups. The only scheme implemented on a massive scale in the State, is the housing scheme for agricultural labourers, popularly known as the 'one lakh houses' scheme, started in 1972 for providing houses for one lakh landless families in rural areas. The house sites are provided under the centrally sponsored scheme for the provision of house sites to landless workers in rural areas. The houses were constructed by the State with Government funds supplemented by contributions from the general public, voluntary organisations, local bodies, etc. The aim of the scheme was to construct one lakh houses at a cost of Rs. 30 crore, the cost per house being Rs. 3000. No other scheme made such a profound impact on the society at large as the 'one lakh houses scheme'. This has been a novel one in many respects.

While it met one of the basic needs of the community, it also aimed at obtaining the maximum popular support and participation including financial help from the people. It was designed as a massive development programme with the actual involvement and participation of people at every stage. Under the scheme, construction of 57,000 houses could be completed. In addition to this about 33,000 house sites were distributed to rural families. Though the full target could not be achieved so far as the construction of houses was concerned, this scheme stands out as one of the rare instances of a massive development programme being successfully implemented with popular participation.

Housing Board's Role

The major agency in the field of housing in the state is the Kerala State Housing Board which was set up in 1971. Several house construction programmes have already been launched by the State Housing Board. So far, the Board has taken up nearly 50 housing schemes involving the construction of about 7800 houses for different categories of people and costing, in all, Rs 16 crore. The Housing Board is also taking up public housing schemes like Rural Housing Scheme besides making available financial assistance for construction of houses to the Economically Weaker Sections (EWS) throughout the State. The Rural Housing Scheme is intended mainly to provide housing facilities to the police personnel and other Government servants. Under the scheme for economically weaker sections, the Board will be providing financial assistance for the building 10,000 houses every year. The Board is also participating in house construction programmes in collaboration with other institutions like the Construction Corporation, Financial Enterprises and the Housing and Urban Development Corporation (HUDCO). The Housing Board has also recently formulated another scheme for giving advances to people whose annual income does not exceed Rs. 18,000. Under this scheme loans up to Rs. 25,000 or 80 per cent of the cost of construction or whichever is less, will be granted to applicants. Slum clearance programmes are envisaged by the State Government in the three cities of Trivandrum, Cochin, and Calicut. In order to reduce housing shortage in these major cities, the Government have decided to develop satellite townships. The construction work relating to the first town has been started at Thrikkakkara, Cochin. This scheme costing about Rs 4.6 crore is intended for the construction of 1000 houses with essential facilities like shopping centres, schools, cinema theatres, bus shelters and dispensaries. In addition to the above house construction programmes, the Kerala State Housing Board has schemes to benefit working journalists, industrial workers, staff of local bodies, police personnel, private school teachers and Keralites working abroad. These housing programmes could be accelerated if institutions like HUDCO agree to raise the ceiling cost limits fixed for building construction.

In the Sixth Plan (1978-83) an amount of Rs. 30.76 core is earmarked for housing schemes over and above an allocation of Rs 3.50 crore for police housing. This is a significant step-up considering the outlays in the previous plans. Low cost housing schemes which would benefit the weaker sections of the community are given special emphasis in the Sixth Plan. Though a number of housing programmes were implemented in the plan era, the problem of housing in Kerala remains as grave as before. The One Lakh Houses Scheme should constitute a path finder in this sphere of development and the tempo has to be maintained by taking up new schemes of a similar nature. ☐

Urban Housing : Planning And Policy Implications

Gopal Bhargava and A. K. Jain

HOUSING is one of the basic human need for rich and poor section of our society. In the metropolitan and large cities the housing demand has reached an alarming proportion. Such a reality concerns the acute scarcity of housing situation with the rising trend of rental value. The struggle or shelter has become a great problematic issue with reference to the growing cities. Every year the flow of migrants and additional source of job opportunities has resulted into the confrontation of a struggle for shelter.

In cities like Ahmedabad, Bombay, Calcutta, Delhi. Madras, Kanpur etc., there has arisen a serious crisis due to the non-availability of land subsequently rental values have reached a sky-rocketting price. This has forced the urban poor to be conditioned with a living environment of slums and squatter settlements. The chawls of Bombay, jhuggi jhompri of Delhi and bastees of Calcutta do reflect the inhuman living conditions. People huddle together and are without Public latrine and water supply in the chawls of Bombay and bastees of Calcutta.

Building Material Cost

The low cost housing has a great relevance in planning dwelling units for urban family. To a large extent the building material cost has appreciated to manifold times in items of cement, steel, brick and wood. Since the present situation has added the building material cost thereby substitution needs to be contemplated. The flyash, stone, lime and mortar are to be the factors responsible for economising the construction cost of a viable dwelling unit embodying the functional utility and aesthetic considerations.

Technological innovations and research technique needs to be emphasised for planning the low cost housing on a mass scale basis. Cheaper houses should be the governing direction of a policy framework. However, fixing the ceiling limit of land has to be ascertained while the procedure of its disposal is concerned with its legal implications.

It is emphasised in an emphatical consideration that unless housing is not viewed as a social need in terms of productive factor the planned perspective would not encourage the desired levels of investment outlay. Such an approach of planned need should be specified in terms of a social welfare objective and acceptance of investment in housing should become a productive factor consideration. Since investment has not been attracting housing programmes on a massive scale, therefore slums have grown up on an alarming magnitude.

The report of the expert committee on "Methods for reducing the cost of large-scale housing construction in major cities" recommended soil investigations and tests carried out to determine the bearing capacity of soils for suitable foundations; new and economical techniques of foundations be adopted in soils of low bearing capacity, lime surkhi and fly ash should be used in conjunction with cement for preparation of mortars and plasters for better results and savings in cost; a lowering ceiling height of 2.7 metres.

The economy in construction as recommended by the Expert Committee are : (a) concrete mix should be designed for specific usage according to the code of practice; (b) fly ash may be used as a replacement for cement upto 20 per cent by weight in structural concrete; (c) structures should be designed on the basis of ultimate strength design procedure and (d) high strength deformed bars should be used in place of mild steel bars for re-inforcement.

Objective of the Housing Plan

The Draft Five Year Plan (1978—83) has enumerated the following objectives in the housing schemes:

(1) Promotion and encouragement of self help housing;

(2) Formulation of public sector social housing schemes in such a manner as to cater and also be within the paying capacity of economically weaker sections of the community;

(3) Augmentation of resources of institutional agencies like Housing and Urban Development Corporation (HUDCO) and State Housing Boards to enable them to provide infrastructural facilities as a means of giving impetus for housing by private agencies; and

(4) Promotion of research in building technology and development of cheap and local building material.

Further, the schemes of urban housing has been contemplated for slum improvement with the substantial increase in investments and consequently the attempt for massive relocation of slums will be given up. To arrest the growth of slums, the main emphasis in the Five Year Plan will be on housing for economically weaker sections (EWS). The strategy implies the provision of "Sites and Services" with enough funds for a minimum structure, the beneficiary being given a loan not exceeding Rs. 3,000 repayable over a period of 20-25 years at concessional rates of interest. The scheme envisages that the beneficiaries will themselves gradually improve on the quality of the accommodation through their own efforts. A provision of Rs. 446 crore has been made in the Plan with a target of approximately 15 lakh units being constructed.

The squatter settlements have been growing at a rapid speed due to high cost of land and constructional activity. The India Habitat 1976 report highlights the following observations that "the process of migration in large numbers of urban areas has created problems of accommodation, utility and services of a magnitude that existing cities cannot meet. Migrants

The authors belong to Town and Country Planning Organisation, New Delhi

occupied whatever land that was available and constructed huts and shacks from material that they could afford. Thatch, mud, bricks, tin, wood, hessian and canvas were assembled to provide shelter. There was no water or sewerage system, nor were there drainage facilities or paved streets. The huts multiplied and grew into squatter settlements. The older parts of the city became more congested and the rate of growth of slums increased. It is estimated that nearly 25 to 30 per cent of the population in cities live in slums of squatter settlements". Thus, our cities have been greatly conditioned with the growth of squatter settlements, particularly in the cities like Ahmedabad, Bombay, Calcutta, Delhi, Madras, Kanpur.

With the growth of squatter settlements in our cities the unhygenic conditions have grown. The public latrine, water supply, sewerage and drainage has been the unsatisfactory situation in the midst of squatter settlements. In such clusters of dwelling units there is denial of fresh air, light and privacy. The human approach of facilities is the curse which speaks the horror of squatter settlements of our city life.

One wonders as to how housing for urban poor can be solved. With the growth of skyscrappers the squatter settlements have multiplied in a large number. Since the low cost housing has not been provided to the large majority of urban poor therefore the mushroom growth of squatter settlements has emerged in a gigantic size particularly in cities like Ahmedabad, Bombay, Calcutta, Delhi, Madras, Kanpur etc. The urban housing is in a great crisis and the proper approach of planning and policy implications has a great relevance with an objective for promoting the mass scale housing activity.

The existing clusters of "chawls" of Bombay, 'bustees' of Calcutta and the unauthorised construction of Delhi depict the dire need for regularisation with the levy of land developmental charges. Surprisingly, land in our cities has not been earmarked for service personnel However, in Bombay and Calcutta the land occupied by the squatter population and unauthorised construction of Delhi cannot be eradicated since thousands constitute a cluster of occupancy rate of a residential complex.

Finance for Housing

The pertinent question arises whether a housing policy should consider the aspect of demolition as a measure of slum clusters and unauthorised constructions or improvement thereof. The watch-word of planning objective is to evaluate the social welfare considerations of a large percentage of weaker section of society living in slum areas in our metropolitan and big cities. There is an imperative need for a radical change of housing policy with a positive action of planning for improving the living conditions and provision of a congenial environment within the slum and squatter settlements.

Housing finance is an acute phenomenon. In the urban housing sector there has been a poor performance. The flow of finances towards the housing activity is a serious problem, therefore the imperative need is to promote the functioning of Government sponsored financial institutions. However, to a large extent the banks and Life Insurance Corporation should provide cheap rates of interest for house building activities both in the rural and urban areas. It is presumed that with such financial institutions the planning for housing on a mass scale basis can be achieved.

This has to be contemplated since a dwelling unit is a social need. Further, the construction of housing should be undertaken by the multifarious agencies. A single Governmental agency do function as a monopolistic housing authority of planning purpose with the lack of competitive design of structures and composite outlay of space in its functional type of characteristic. Thus the management and administrative system of planning housing agencies should be allowed to function on competitive basis.

Planning Action

From the planning standpoint for housing the masses it is imperative that the household of income assessment needs to be ascertained. However, the paying capacity of hosehold has to be enumerated in the different income categories, with reference to the volume of demand for evaluating the cost estimation for a mass scale housing plan. This strategy of action has its relevance in streamlining the planning of housing programme on a mass scale basis.

The four storey house in its built up structural form needs to be planned for optimising the land utilisation particularly in the context of metropolitan and large cities. The procedure of auctioning the land creates uptrend in its valuation. Further the spread effects are responsible for the rising land values over the city areas. However, too much spacious houses need not be built since they occupy the scarce land of metropolitan and city areas. The planning authority should design houses when it has ascertained the type of accommodation as demanded. Housing schemes should be made for meeting the family requirements and needs to be examined in terms of loan repayment instalments. For housing purpose Banks and Life Insurance Corporation should charge a cheap interest rate realising the basic human need. It needs to be emphasised emphatically that houses should be built cheaper in cost by the Planning Authority to meet the demand requirements of weaker sections of society.

In a document of United Nations, Department of Economic and Social Affairs "Housing Policy Guidelines for Developing Countries" has rightly observed that the insertion of a housing policy and plan into a national or regional development plan, moreover, implies the need for an extensive review of priorities and reallocation of resources for which economic as well as social justifications have to be advanced. Housing Policy makers should also make sure that an adequate infrastructure and administrative apparatus to implement a housing programme already exists . evaluate such economic determinants as the availability and cost of building materials and skilled labour, trends in interest rates and land prices, household incomes and other variables for which information may not always be available and weigh the political and socio-economic trade offs implicit in adopting one set of housing policy alternatives over another. Policy makers must also face the fact that when the necessary information, knowledge and experience for good policy planning are lacking in coherent housing investments all too frequently result, which contributes little to the solution of nation's shelter needs.

The observations of United Nations do reflect the factors giving rise to a housing plan. However, for developing economy the serious involvement of housing crisis is the inability of urban poor in terms of its capacity to rent an accommodation. The housing construction has to be linked with the paying capacity of a large majority of urban poor.

The housing policy involves the following components which needs to be duly recognised as an aspect of planning considerations namely :

(i) the comprehensive assessment of urban population and their repayment capacity over a period of time ;

(ii) appropriate utilisation of land with its ceiling limits ;

(iii) chalking out a housing programme with reference to the public utility services;

(iv) co-ordination of multifarious housing agencies in an integrated manner for promoting mass scale programme ; and

(v) projecting the demand pattern with cost estimation has to be the guideline for formulating a housing policy for middle, low and janata income categories.

Housing policy with its guidelines for planning should have a composite neighbourhood units comprising school, market and medical facilities. There is a need to emphasise the environmental considerations in a housing plan. However, landscaping and recreational facilities particularly parks and open space should also become the highlight of a housing policy.

Above all the housing plan should emphasise the programmes in its regional perspective. Since there is an acute housing crisis in metropolitan and large cities, consequently land scarcity has aggravated the demand situation resulting into a higher rental and land values.

The housing scheme should be considered in the peripherial areas of metropolitan and cities with efficient mode of transport network sy.tem. This would ease the housing crisis of metropolitan and large cities. □

Mobilisation of Finance for Rural Housing

Contd. from page 14.

Although its total investment in housing has shown an increasing trend in recent years. there is a case for the L.I.C. investment in rural housing being stepped up commensurately with the share of the Corporation's premium income from the rural areas.

The HUDCO has recently started advancing loans for rural housing programmes It provides loans to individual beneficiaries upto Rs. 2000 for the construction of houses on the strength of State Government guarantee and on the basis of the beneficiaries/State Government providing an equal amount. The HUDCO scheme applies to those States where a matching provision exists in the State Plans and the benefits of HUDCO assistance are available only to the economically weaker sections of the community. The HUDCO has also come forward to advance loans to the primary cooperative Housing Socities through the Apex Cooperative Societies.

Cooperative Housing Societies could be promising source of finance for rural housing. The merit of a rural housing cooperative lies in the fact that rural savings can be mobilised for housing through the instrument of cooperation. But finances raised for housing through cooperatives are as yet limited. The Cooperatives have not been able to build up their own funds but depend wholly on the Government and LIC for their operation. There is need to build up the Cooperatives so as to ensure that house-hold savings are mobilised for house-building. The Maharashtra Cooperative Housing Finance Society is providing long-term loans to Taluka Housing Mortgage Societies who in turn advance loans to their members for house-building in rural areas. Under a scheme to assist housing cooperatives of backward class people the State Society has advanced an amount of Rs. 247 lakh to 61 backward class societies in the State. In Tamilnadu, the rural areas are covered through 60 Taluk and divisional level rural cooperative housing socities. The Tamil Nadu Cooperative Housing Society has taken up a massive rural housing scheme by allocating 25 per cent of its financial resources to the taluka-level and divisional level rural societies. The Kerala Apex Cooperative Housing Society in collaboration with the HUDCO, the Kerala Housing Board and the Kerala State Cooperative Bank has launched an aided self-help cooperative housing scheme for the economically weaker sections in rural areas to construct one lakh of houses in a two year period ending June 1980. The Karnataka, Andhra Pradesh, Orissa, Punjab and Rajasthan State Cooperative housing societies have also launched large scale rural housing schemes for the benefit of the poor and in particular the scheduled castes and scheduled tribes.

The Reserve Bank of India can play an important role in financing rural housing. It has already issued guidelines to Banks for financing housing schemes in rural areas under which loans are advanced upto 50 per cent of the cost of the house against mortgage of property or Government guarantee. The Commercial Banks perhaps find it difficult to advance Loans for kutcha houses as the structure itself may not last the stipulated period of repayment which is generally 10 years. The Banks could, however, provide funds to State Governments or to Housing Boards or other agencies like Regional Rural Banks and Primary Cooperative Housing Societies who in turn could finance construction of house built of cheap local materials: □

BOOKS

Housing

Voluntary Agencies & Housing : Madhav Achwal : UNICEF publication : Price 50.

THE HOUSING PROBLEMS in developing countries generally pose a challenge to their national governments. It is much more so in India with an expanding population and paucity of resources. As the planners in India had wisely formulated, housing for the people is one of the five primary needs, next only to food, water and clothing.

It is generally known that the limited financial resources available for development should go first to fighting hunger and poverty. As such, government alone cannot be expected or relied upon to find a solution to the challenging housing problem. The problem is multiplying itself with the passage of time, as more and more families stand in need of a shelter

Voluntary agencies in India as in many other countries, had been functioning in their own limited way to help alleviate the miseries of the poorer people. But unfortunately, there has not been enough appreciation of their work in this field and much less of encouragement for them, both from the Government and the semi-government bodies.

However, the United Nations International Children's Emergency Fund (UNICEF) and its urban advisor, Dr. William J Cousins, embarked upon a new venture to evaluate the work done by some voluntary agencies in India in the field of housing. The book under review is the record of such efforts

The report covers the work done nine such agencies And almost everyone had been motivated by an irrepressible desire to help humanity in overcoming the difficulties by community work. These organisations have been spread over the whole country, both in villages and semi-urban areas.

The report covers also the work done by two individuals, four voluntary agencies engaged in CD work, besides the work done by a research organisation and by a body connected with housing and of a commercial agency doing extensive work in prefabrication The two individuals who have done considerable work in the field of housing for the poor are Laurie Baker in Trivandrum and S Krishna Iyer in Madras The work of Asha Niketan Welfare Centre Bhopal, Housing Activities Projects of Baroda, Citizens Council, Madhya Pradesh Ravi Mahasangh, Ahmedabad are Study Action Group, Operations Research Group, Baroda, Pipla Palli Samiti, West Bengal, Siropex India Ltd (Pune), treated concisely with telling effect

The book also gives a projection of housing by 2000 A D highligting the dimension of the problem and how the work of vountary agencies do require proper recognition and utilisation Also included in the work are brief sketches of the poor man's houses which can be built within Rs. 2600 (p 10).

The book should be immensely useful for any problem in India within a limited period

E. P. Radhakrishnan

The Invading City

Process of Urban Fringe Development : A Model —K. N Gopi, Concept, Rs. 35

THERE IS growing interest in the field of urban development especially after the Habitat 1976 Conference at Vancover. This thin little book is a useful contribution to such literature. Unlike other studies, Gopi deals with urban fringe In this particular case, the author examines the development on the fringe of Hyderabad-Secundrabad city.

'Urban fringe' is defined by Lewis Keeble as the land surrounding the town which is not considered as a part of it but whose use is influenced directly by the town It is a "zone between the country and the city". Gopi examines the entire phenomena of the transformation of a fringe of a metropolitan settlement in the light of structural changes in the metropolitan in economy and society. The author establishes that not only the land use pattern change (under first impact of bursting metropolis) but the entire social structure of the fringe area is radically metamorphosed because of its strong linkage with the metropolitan economy.

Uppal is a fringe village of 2,024 households, about 55 k.m. from Residency and 10 k.m. from Secunderabad railway station on the Hyderabad-Warangal State Highway. It has a Gram Panchayat. It is a small community of 9,414 persons. It is transitional society in the sense that it is neither rural nor urban but possesses the characteristics of both. In sum, it is a dualistic society. The settlement is of linear pattern. Occupation-wise 550 households, the largest number belong to agricultural labour, followed by government service (358),trade and commerce (245) and factory workers (221). Mostly unskilled The Reddy caste is by far the larger single group (28.40 per cent), followed by the Harijans (190 per cent) and Muslims (18.00 per cent). The annual population growth rate of Uppal was 6 05 as compared with just 2.40 of Hyderabad city proper between 1951-71. During 1961-72, 56.7 per cent of Uppal's population growth may be attributed to in-migration factor alone. In 1974, migrants formed 32 per cent of Uppal's total population Of the total working population, 5 32 per cent is engaged in primary activity and 27 28 per cent in tertiary activity Workers to total population form 43.58 per cent (1971). The average size of the household is 4.91, smaller than that of Hyderabad at 5 57 In terms of political participation Reddis occupy 4, Kalals 4 and scheduled castes 2 seats in Gram Panchayat elected in 1971.

The large influx of migrants with different outlook, the establishment of modern industrial units within the area, the extension of city's fast transportation bus system, all have a profound impact on the social structure of the community.

Today 82 per cent of the cropped area is under fodder. There has been diversification in cropping and also a shift from food crops to cash crop, including vegetables. This is rational, for, the average net income per hectare for paddy is Rs 1,970, vegetables Rs. 3,600 and fodder Rs. 4,070. Daily 1,200 litres of milk am moved from Uppal to the city almost exclusively on bicycles This explains expansion of area under fodder This interesting phenomenon reflects farmers, response to the city demand The relationship between Hyderabad city population and area under cash crops in Uppal is linear, the co-efficient of determination being 0 83. This is an important theoretical contribution of the author. It is necessary to regulate land use of Uppal study area to save agricultural land and arrest high land prices on account of the invading city and the ecological process of "succession" and "invasion".

S. M. Shah

Letter to the Editor

I SAW AN article on 'Tasar Industries of Bihar' written by Dr R. P. Verva of Ranchi University in 'Yojana' dated 16th November, 1979. As I am a research scholar in applied economics I felt type of articles with special references to Bihar are very much useful. Hence in your future issues I hope such articles would find a place.

Bihar is rich in vast natural resources, but journals of all India level do not reflect the research work done in Bihar.

Hope you will consider my suggestion and accommodate articles related to Bihar.

S. N. Purabey
Bhagalpur University

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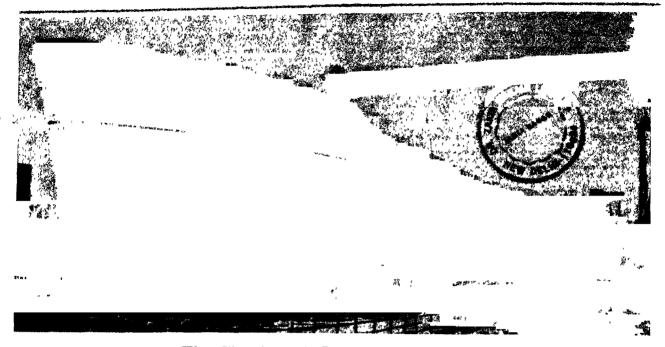
The Floating of 'Rani Padmini'

JANUARY 28, 1980 is a red letter day in the history of the Shipping in the country. It was on this day, Rani Padmini, the first ship constructed at the Cochin shipyard was floated out at a simple ceremony held in Cochin. This ship with 75,000 dwt is the biggest bulk carrier constructed in India. It is 245.4 metres long and 32.83 metres wide When fully loaded, the maximum draft is 13.83 metres and gross registered tonnage 90,000. The estimated cost of this ship has been revised to about Rs 32 crore from the original of Rs. 19 crore

Rani Padmini, now floated out is the first of the order for three bulk carriers of 75,000 dwt capacity. The interior decorations and other connected works will be continued in the floating ship in order to give room in the yard for the construction of the second ship. On completion of these works Rani Padmini will be delivered to the Shipping Corporation of India by the end of this year. The second ship in turn is expected to be ready for launching by the middle of 1981 and for delivery by the end of that year.

Of the various items of machinery and equipment installed in the shipyard, cranes form a major component. Over 60 cranes of varying capacities ranging from half a tonne to 150 tonnes are provided in the shipyard. The most noteworthy among them is the 150 tonne Goliath Crane, so called because of its giant size and capacity. Weighing over 1200 tonnes, this crane reaches 67 metres above ground level, 98 metres across and travels over 350 metres serving the assembly shop and building dock The main utility of the crane is to transfer fabricated blocks of ship and also the main engine parts on to the building dock and position them accurately for final fitment

The keel of the second ship for Ratnakar Shipping Company has subsequently been laid. Meanwhile 35 per cent of the fabrication work of this ship had already been completed. This ship will be in the building quay for about eight months. The third ship will be ready in 16 months and the fourth within 15 months by 1982-83. With the 5th ship the cycle of one ship will be achieved and thereafter the rated capacity of two ships a year. The first five ships will be of the same design.

Meanwhile the shipyard is simultaneously engaged in involving original designs of bulk carriers of 35,000 to 45,000 dwt capacity which are also gaining popularity in the shipping market. In order to keep pace with the rapid advancement of ship building technology, Cochin shipyard has also worked out programmes for research. The training school of this shipyard has been acclaimed as one of the best institutions of its kind in the country.

The ship repair complex is expected to be ready for operation by the middle of 1980, It will provide dry-docking facilities for vessels upto one lakh dwt. The profits really lie in ship repairing. The repairing dock is much bigger than the building dock. Government has sanctioned an amount of Rs. 4.8 crore for deepening the channels to the required depth and width to bring large size ship to the repairing dock The dredging work of the channel has been entrusted to Cochin port Besides Indian ships foreign ships will also come for repairs in this yard.

An expansion programme to double the production with a marginal investment of Rs. 40 crore is under the active consideration of Government. The proposal is to extend the building dock by 100 (one hundred) metres in order to undertake construction of two ships simultaneously This will increase production to four ships a year. The main objective of the Cochin ship yard is to build and repair ships cheaper, faster and better

This shipyard has a little over 2,000 employees, one third of whom has been trained in its own training school. Besides providing direct employment, the shipyard is also promoting the growth of ancillary industry. This will result in the establishment of an infrastructure for ship building in Kerala in addition to generating employment potential. □

K. Gopinath

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FAIR DEAL FOR THE TRIBALS

OUR ACHIEVEMENTS

Nuclear Power Resources

THE current uranium resources within the country are estimated to be capable of supporting a first stage nuclear power programme of about 8,000 mw installed reactor capacity.

Of the 34,000 tonnes of uranium resources in the country, 15,000 tonnes are considered economically exploitable at current international prices. Estimates of additional resources are placed at 27,000 tonnes.

The most important deposits of uranium ore are located in the Singhbhum region of Bihar. New target areas have recently been identified in the crystallines of Madhya Pradesh and some significant uranium deposits have been discovered. Exploration efforts have revealed uraniferrous zones in Rajasthan, and structurally-controlled uranium deposits in parts of the Central India.

India has one of the largest reserves of thorium contained in the monazite deposits along the tea board and in inland places. The deposits are expected to yield 3,63,000 tonnes thorium oxide.

New Maize Variety

A NEW early maturing maize variety (85—90 days maturity) 'Navin has been released by G. B. Pant University, Pantnagar. Navin has given an average, yield of over 37 quintals per hectare and it is resistant to foliar diseases and tolerant to stalk rot. It is suitable for growing in Uttar Pradesh

BHEL Bags Malaysian Order

THE state owned Bharat Heavy Electricals Ltd. has secured an order for combined hydro-turbine-generator sets and other associated equipment. Under this order, two 25 MVA,(22 MW, 300 rpm turbine-generators will be manufactured and supplied by the BSEL, Bhopal, to Tenom Pangi Hydro Project of Sabah Electricity Board, Malaysia.

Other export orders for hydro equipment bagged by the BHEL which are under execution at the Bhopal factory, include one 115 MW, 121 MVA generator for Bhumlbol Project of Thailand, 22.8 MW turbines for Pattani project of Thailand, 35 MVA hydro generators for Kulekhani project of Nepal, 53 MW generators for Ohau and 60 MW generators for Rangipo project of New Zealand.

Portable TV Set goes Foreign

THE State-owned Electronics Trade and Technology Development Corporation Limited (ETT-DC) has secured orders from the United States for about 400,000 portable Indian television sets of 12 inche screen in the next four years. The total sum involved is Rs. 15 crore. The Corporation had secured within five years, export orders worth more than Rs. 20 crore in 50 different electronic items from 25 countries.

Export of Sea Food Up

SEAFOOD of 86,895 tonnes valued at Rs. 234.6 crore against 6,5967 tonnes worth Rs. 180 crore in the previous year had been exported in 1979. Export of fish, fresh and frozen, showed more than five-fold improvement while frozen fish and squid, the recent additions to the export list, made significant improvements. Export of frozen frog legs, which had received a severe setback in the US market had also shown a 40 per cent increase.

Fertiliser Dosage For Groundnut

THE Punjab Agricultural University, Ludhiana has found out that application of six kilograms of nitrogen (preferably from ammonium sulphate), 16 kg of phosphoric acid from superphosphate (single) and 10 kg of potash per acre (if the soil test shows deficiency of potash) gives the highest yield of groundnut. In the groundnut-wheat rotation, if the full dose of phosphatic fertilizer has been applied to the wheat crop, its application to the groundnut can be omitted. In order to get the best results, all the three fertilizers should be mixed together and drilled at the time of sowing

Bauxite Deposits In Orissa And AP

A NUMBER of large deposits of bauxite are discovered in Orissa and Andhra Pradesh on the east coast. Bauxite reserves have now gone up from a mere 25 crore tonnes in the early 1970's to 200 tonnes

Low Cost Tools and Machines

THE Central Mechanical Engineering Research Institute, Durgapur, has developed an automatic hand-knitting machine which can knit garments in multicolour designs in plain, tuck and slip stitches. The machine needs little repair and maintenance, and has a vast potential for export to neighbouring counries.

The Durgapur Institute, in co-operation with the Central Fuel Research Institute, Dhanbad, has developed a paddy husk combustor to make use of paddy husk wastes for drying paddy in rice mills. This machine also helps to reduce paddy-drying cost.

These simple and cheap tools and machines will go a long way in reducing the unemployment pressure in rural areas as they have been designed and developed to suit village conditions.

Additive For Iron Ore Beneficiation

INDIA has become the first country to successfully use a chemical additive for beneficiation of iron ore with the development of a powerful additive by the Regional Research Laboratory, Jorhat. Manufacture of the additive has been commenced by an industrial concern licensed for the purpose. The Steel Authority of India is using the chemical for iron ore beneficiation.

The Laboratory has also developed a chemical additive for pre-treatment of the crude oil before its transportation to refinery through pipelines.

Current requirements of such additives are met through imports which cost the country Rs. 2 crore ultimately.

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Unionisation of Rural Workers

ACCORDING to available projections, the rural workers in the country number more than 23.4 crores against a total labour force of 28.51 crores. This estimate merely confirms quantitative importance in the country's economy which is primarily agricultural and traditional. It will be perfectly logical to argue that trade unionism, which brought about a qualitative change and material improvement in the life style of the industrial workers, has, by and large, by-passed their comrades in the unorganised sectors, mostly in the village areas. The workers therein continue to live a life of deprivation and destitution, having practically no worthwhile organisation of their own to strike a fair deal for themselves when pitted against their employers who have ample opportunties to exploit them in many devious ways.

The increasing emphasis on the need to bring immediate relief to the weaker sections of the society has inevitably highlighted the problem of the workers in the rural sector, who are not even aware of the many beneficial statutory measures and welfare schemes undertaken by the Government to improve their wretched condition. Their unionisation would certainly have given a grist to the mill. Of late, there has been a good deal of exhortation from planners and administrators for formation of such unions. But the task is not easy. For example, the landless labourers, who constitute a substantial majority among the village workers, depend upon the big farmers for their employment as also for subsistence during the idle season when they cannot find any gainful employment In some of the sample surveys conducted by the Central Board for Workers Education, sponsored by the Ministry of Labour, the landless labourers told emphatically that talking about unionisation was not at all relevant in the rural areas as they had very bad experiences and in many cases they lost their jobs when they tried to form a union. Moreover, their scattered dwellings and barriers of speedy communication stood in the way of their unionisation.

The nature of occupation and scarcity of resources for mobilisation add another dimension to their problem. A rural worker, as defined by the ILO Convention No. 141 and the ILO Recommendation No. 149, means any person engaged in agriculture, handicrafts or a relative occupation rural areas, whether as a wage earner or a self-employed person such as tenant, share-cropper or small owner-occupier. Forestry workers, fishermen and workers in tribal areas are also included But their illiteracy, grinding poverty and peculiar social and economic environment are not conductive to the growth of the spirit of trade unionism.

Yet it would be a mistake to suppose that the leviathan is not moving at all The inertia of the victims of exploitation is giving way slowly, albert surely. The great upsurge among the downtrodden to wrest their human rights from the misappropriators has led recently to inhuman atrocities committed by the landed gentry on the landless labourers. Mere passing of laws conferring rights on the rural workers is no remedy to the ills. Sporadic upsurges resulting in violent clashes, loss of lives, burning of houses and other monstruosities create more problems without solving any. Lawlessness has to be replaced by a positive programme of action. In this situation, the rural workers need to appreciate and analyse the wide range of their socio-economic problems so that they can find solutions through legitimate trade union activities. If the prior attention of the trade union movements have to be diverted to them, it is high time now to expand the Central Board's rural workers' education programme at a faster pace to help rural workers in shaping their personality, developing their organisations and building up the required cadre □

A plan for tribal farming

A. R. Patel
and
B. N. Patel

BANSDA taluka in Vulsad district of Gujarat is one of the most socio-economically backward areas in the country. It is mostly inhabited by the tribals. Their main source of subsistence is farming (paddy and "Nagli") on a very limited holding. The rainfall in the area varies between 1,910 mm and 2,980 mm, and is spread over mainly from June to September. One of the immediate consequences of this limited rainfall, however, has been the difficulty in raising high-yielding fine varieties of paddy and introducing changes in the cropping pattern.

A detailed study of the two villages, Zuz and Khadakiya has furnished interesting data. First, the villages are inhabited by the tribals only. Second, the families below poverty line account for 85 per cent and 97 per cent, respectively, with per capita annual income of Rs. 172 in Zuz and Rs. 177 in Khadakiya, as against Rs. 191 in Bansda and Rs. 594 in rural India. Third, the area under agriculture is 27.5 per cent and 72.89 per cent, while forests account for 65.34 per-cent and 15.66 per cent respectively.

However, the scientific and technological revolution witnessed elsewhere in the nearby areas has not made any breakthrough in these villages. The extremely low level of skill, knowledge of resources and initiative have inhibited them from exploiting the available natural resources, water, land and forests.

The problems confronting the development of the tribals in this area has not been so simple. The indepth study conducted in this area revealed, *inter alia*, that the tribals had been exploited for ages and that the solution of the problems would not end with the purvey of credit alone. They needed a selfless and dedicated organisation very close to them in which they had confidence.

A. R. Patel and B. N. Patel are with Bank of Baroda Bombay

This need was filled by the Shri Sadguru Agricultural Services Society, which was set up at Bansda for uplifting these poor tribals. The society has been able to organise them under one umbrella. During 1972 this area experienced unprecedented scarcity conditions. The miseries and long-term adverse effects of this situation would have been unpredictable but for the timely entry of the Bank of Broda's large-scale operations through its Unai branch.

The Bank, with the help of the society, formulated a comprehensive tribal farm deevlopment scheme which envisaged the need for a built-in mechanism to provide all the missing links, such as (i) technical guidance for raising the farm output, (ii) irrigation from a common source, like a lift irrigation system installed on the Kaveri, (iii) supply of the inputs, like seeds, fertilisers and pesticides, (iv) custom services for conducting timely, efficient and speedy farm operations, (v) marketing of the produce, and (vi) credit for raising crops, purchase of bullocks and undertaking land development works.

The bank sanctioned direct loans to the tribals for raising crops, purchase of bullocks, and converting their land into "Kyari" land and indirect loans to the society for installation of two lift irrigation systems at Lachhakadi and Zuz villages, purchase of a tractor with accessories and construction of a godown to store the produce of the tribals Beesides cash, credit facilities have been sanctioned to the society, so as to help it make immediate payment to the tribals against their farm produce being stored in the godown, as indicated in Tables 1 and 2 on the next page.

Impact

The scheme commenced from June 1974. It was stabilised, by 1977, and taken up for evaluation. The results achieved during 1977 have been analysed and an attempt has been made to compare them with the facts as they existed during 1973—the pre-investment period The sample study consisted of 27 farmers (20 61 per cent) out of 131, who received the loans for various purposes. They were selected at random from the three villages. As a large number of farmers financed and covered under the scheme possessed land upto two hectares, more emphasis was laid to study the results achieved by them For this purpose, 20 small farmers (74 07 per cent) out of 27 were included in the study.

The study revealed that while these 27 farmers brought 36.90 per cent (18 60 hectares) of the area held by them under irrigation, 20 small farmers brought 39.31 per cent (11.40 hectares) of the land owned by them under irrigation. For efficient management of the land resources in paddy growing areas, as also optimising the return on the investment created for increasing irrigation facilities, the small pieces of land held by the tribals should be converted into "Kyari" land by undertaking appropriate land development measure, such as proper bunding, levelling and providing adequate drainage facilities. These measures would not only help augment paddy output but also would increase the water use efficiency. The cost of such works, of course, is very high and spectacular results are not available in the initial years. As such, farmers hardly come forward for this.

However, in this case, it was indeed a healthy sign of development that these farmers have been motivated by the society and they have responded favourably to do this job. Of the 27 farmers, 77.78 per cent 21 farmers) took up this work on 7.79 hectares (20.03 per cent) out of 38.80 hectares of land held by them. The small farmers (15 out of 21) constituted 74.30 per cent of the total number of the farmers and their share was 56 35 per cent in the total developmental work The net effect of both these important works—irrigation and land development—has been very much evident from the fact that the farm output increased by 89 per cent from 34.6 tonnes to 65.4 tonnes. Thus, the productivity of land during the post-investment period increased by 71.35 per cent, from 7.68 quintals per hectare to 13.16.

Incremental income

A significant achievement was recorded in the sphere of changing the cropping pattern. For the first time, the tribals were motivated to use high-yielding varieties of paddy IR-8, Mussorie. G-10, and fertilisers As a result, the production of paddy went up by 75.69 per cent from 32 5 tonnes during the post investment period, even though the area under paddy crop was reduced by 0.60 hectare. Another appreciable change was that the farmers, again for the first time, took up the cultivation of wheat, which produced 76 quintals, giving an yield of 11 97 quintals per hectare The cropping pattern also witnessed some changes in respect of allocating some area to the cultivation of gram. The cropping intensity increased by 30.32 per cent.

The ultimate benefit of the scheme has been analysed to find out if there has been any increase in income during the post-investment period and to what extent This has been found out by analysing the data and quantifying it for the purpose of working out the net incremental income. The net incremental income is the difference between the post-investment and pre-investment net income per farmer. The net incremental income is the function of the factors responsible for inducing changes in the area under remunerative crpos, reduction in the cost of cultivation, increase in the productivity of the crops and better prices for the produce. Thus, the interacting effect of all these factors in a given situation determines the nature and extent of variation in respect of net incremental income. In fact, the significance of the net incremental income has to be realised in terms of the farmers repaying capacity and genuineness or worthiness of the investment. The incremental income per farmer was Rs 763 in the case of the small farmer and Rs. 1,337 in the case of others.

More jobs

The important finding of the study related to the employment potential which the scheme has created in the area. While undertaking the much-needed land development work in this area, the sample study showed that the family members and other hired labourers earned Rs. 5,046, by executing this work which involved 1,682 mandays. This was, of course, a short-term gain The employment potential during the post-investment period increased by 28 mandays in the case of paddy cultivation per hectare and by 38 mandays in the case of wheat cultivation. However, the change that has been brought by introducing high-yielding varieties, fertilisers and crops like wheat is remarkable.

The investment pattern in respect of higher investment on seeds, fertilisers, labour and irrigation was conspicuous (Table 3 on the next page). Though no significant changes were observed in respect of creating or improving assets during the post-investment period, the farmers, in the course of 2-3 years working of the scheme, did provide an evidence that a modest beginning had been made in this direction. The small

TABLE 1

Disbursement of Loans

Village/purpose	1976 A/cs	1976 Amt. (Rs)	1977 A/cs	1977 Amt. (Rs.)	1978 A/cs.	1978 Amt. (Rs.)
Zuz						
Crop loan	45	35,000	45	35,220	66	44,000
Land development	20	6,000	..	.	..	..
Purchase of bullocks	6	26,000	2	1,000	3	4,000
Lachhakadi						
Crop loan	49	60,000	49	60.223	80	56,000
Land development	24	30,000	3	4,000	..	.
Purchase of bullocks	4	2,000	..	..	5	6,000
Khadakiya						
Crop loan	45	41,000	45	46,093	62	48,000
Land development	11	14,000	1	1,000	..	..
Purchase of bullocks	5	2,000	.	..	2	7,000

TABLE 2

Loans to the Society in March-August 1974

Purpose	Unit	Amount (Rs.)
Lift irrigation system at Lachhakadi	1	1,25,358
Lift irrigation system at Zuz	1	1,60,000
Tractor unit with trailer cage wheels and disc harrow	1	57,865
Godown	1	1,11,000

farmer has increased or improved his assets by Rs. 1,280 and that other farmers by Rs. 2,200. Of course, this depends much upon their net additional income, savings and re-investment capacity which in the initial years is always meagre. This can increase in time when they are free from indebtedness and taught efficient management of their available resources.

Farm power

The irrigated farming which helps farmers shift their traditional way to multiple cropping system does require additional farm power for conducting timely, efficient and effective operations. It was with this consideration that the society was sanctioned loans for setting up one tractor unit with necessary accessories. This was done to assist the tribals, who cannot afford to maintain bulls and farm equipment, in conducting their farm operations. The tractor unit has, indeed, rendered useful service in helping the farmers convert their land into "Kyari" land at a reasonable cost. However, eight farmers have been disbursed loans totalling Rs. 8,200 to help them purchase 15 bullocks.

The study has brought out that there has been gross under-utilisation of the bullock power. The farmers have utilised the bullocks for preparation of land and for sowing operations only for 63 days in a year. This bullock power has not been utilised for transport purposes. The cost of maintenance of one bullock per year was Rs. 253. The analysis of the crop loans granted to the farmers revealed that the amount disbursed had no relation with the actual scale of finance, as required for raising the crops. The scale of finance which was basically the amount determined by the cost of cultivation needs to be scientifically worked out and standardised, so as to avoid under-financing as also misutilisation of funds.

The scheme has completed more than four years. As such, the experiences gained from the implementation of the same during this period and the findings of the evaluation draw pointed attention to the following.

Suggestions for improvement

As the irrigation water and diesel are the costliest inputs, efforts have to be concerted to guide the farmers for efficient use of irrigation in respect of the quantum of water to be given at a specific stage of crop-growth and methods of watering. This will reduce the cost of production on the hand and cover more area on the other.

The investment on developing the irrigation system and land development works sharply focus the urgent need for changes in favour of remunerative cropping, including cultivation of vegetables and fruits, and multicropping system which may include short-duration crops. This system will have to be developed for which the Navsari Campus of Gujarat Agricultural University should undertake a multi-disciplined research and development project.

All the farm families should be brought under individual farm-planning and farm-budgeting programme. The extension staff of the society and the field officers of the Bank of Baroda should pay more attention to these aspects.

The soil of every field under the programme should be tested to determine the status of the plant nutrients and advise the requirements of fertilisers in accordance with the crops to be grown. This would reduce the cost of cultivation and optimise the productivity. The scale of finance for all the crops should be scientifically determined on the basis of field studies so as to guide the farmers, the bank and the society.

The under-utilisation of the bullock power may have to be properly studied and wherever necessary this costly sources of energy should be rationally distributed among the other farmers who do not have the bulls and are in need of bullock power at critical time. Other formers may not be encouraged to go in for the purchase of bullocks, and the size of the tractor unit may be expanded judiciously to meet the increasing need in the area.

The findings of the study have confirmed and established the fact that the problems confronting the development of the tribals need a five-pronged approach. First, to undertake an indepth study and analyse the causes as to how and why the tribals have been isolated from the mainstream of the development process and the national life. Second, to seek the solution to the problems of exploitation by the money-lenders, traders, landlords and so on. Third, to create a selfless and dedicated organisation, very close to them, in which they have confidence. Fourth, to identify the needs of their day-to-day life, and endeavour to meet them without any exploitation, hesitation and delay. Fifth, to evolve a mechanism for developing an integrated approach. This approach should integrate all the missing links in the process of development, namely, motivation, technical guidance, supply of inputs, custom services and marketing facilities. The mechanism should lay stress on the importance of professional management and business principles to optimally utilise the scarce resources and common assets. □

Table 3

Investment on Inputs (Rs.)

Investment (per hectare)	Small farmers				Other than small farmers			
	Paddy		Wheat		Paddy		Wheet	
	Pre-Investment	Post Investment	Pre-Investment	Post Investment	Pre-Investment	Post Investment	Pre-Investment	Post Investment
Labour	110	365	..	342	67	312	..	340
Seeds	60	120	..	140	40	120	..	140
Fertiliser	105	325	..	295	80	285	..	290
Other items	277	556	..	412	167	246	..	452
Total	552	1,366	..	1,189	354	963	..	1,222

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Entrepreneurship Development Among the Ranchi Tribals

Dr. Vani Vinayak

RANCHI is one of the districts of Chotanagpur plateau. Here the tribals constitute 58.3 per cent of the population, with a growth rate of nearly 15.1 per cent, the level of literacy being 22.89 per cent. They are divided into several groups. The tribe-wise break-up shows the Oraons constitute 26.4 per cent, the Mundas 21 74, the Kharias 4.48, the Lohras 3.26, the Kharwars 0.35, the Bhumijs 0.04, the Santhals 0 03, and the Chick Baraiks, the Mahali and others 2.

The Mundas were the first to come to this region from the north-west, well before the Christian era. They survived initially by hunting and shifting cultivation and in the process made land available for farming. Land was the basis of life for the Mundas, which they owned collectively in a clan group and accepted the authority of those who protected their land. The advent of the Dravidian-speaking Oraons on the scene with superior art of agriculture, created a situation of conflict with the Mundas, which was avoided by the Oraons not only by accepting the Munda's basic premisis on land, but also their leadership. The majority of the other tribal groups referred to above are supposed to be the descendants of the early Munda settlers.

Since the early days of the British Raj, the tribals had to fight for their land, and history records many rebellions of the tribals against a system that deprived them of their ancestral land. It was partly the attempts of the "Dikus" (non-tribals) to disposes the tribals of their land and partly their strong traditionalism that led to social cohesion and reinforcement of their faith in the original tribal values and social institutions. The basic values, that make the basis of the tribal fraternity and close relationship between the rural and the urban tribals even today, stems from the community ownership of land, which, in essence, is some sort of Panchayat System of the ruling society suited most for self-sufficient rural economy.

Dr. Vinayak is with the Bihar State Financial Corp.

In a tribal village, everybody is equal and inequality in any form is strongly resented and even resisted. They believe the prosperity of the village can be brought about, with each and everyone of them prospering at the same pace. The insistance on equality is so pronounced that it leads to a defect, called in local parlance "Hisinga", that is, jealousy. This feeling is so strong that it nullifies the attempt of anyone who aspires to be better off, either economically or politically. The feeling of "Hisinga" and their social cohesion has created obstacles for their progress as the initiative of the more enterprising is cut down to the common level. This explains that even though their land has witnessed massive industrialisation and new ideas and opportunities have poured in, the tribals, however, allowed them to go unavailed, as it runs counter to their age-old social values.

These values, according to Fr. M.V.D. Bogaert, however good and beautiful, constitute a stumbling block in the progress of the tribal people. The tribal socio-cultural life was definitely suited for subsistance economy, but human history has passed from subsistance to surplus economy under the influence of science and technology. Hence, there is a great need that the tribal social values and relationship must undergo suitable transformation, so as to keep pace with the fast socio-economic and political changes. However, these social values need to be suitably transformed only, and not altered or diminished. Otherwise, the tribals will loose the very frame of orientation which has sustained the tribal society since ages.

Goods sold on credit

According to Sudhir Kakaar, agriculture is the main source of livelihood of the tribals. An overwhelming majority of them are marginal farmers and per head production is assumed to be zero, because of increasing fragmentation of land along with increasing population pressure per acre of land. The major source of cash income of the tribals is through the sale of agricultural produce, fruits and forest products, and through wage earning as migratory labourers. Few tribals are engaged in small businesses, such as carpentry, cycle-repair or running small shops in the villages. The village artisans and craftsman mostly belong to traditional families and they carry economic activities in traditional ways at low level of labour efficiency/productivity. The tribals, practice these trades only as a secondary source of income. One of the reasons for the failure of the tribal shopkeepers/traders could be attributed to the social custom of giving articles on credit or "Paincha" which is repaid, depending on the degree of harvesting. Most of the tribals have ruined their business by selling goods on credit, which is seldom repaid, and this explains why most of the village shops, trades, are being managed by the "Dikus". It is for this reason that the tribal economy is stagnant which inhibits capital formation and diversification.

Voluntary bodies' role

These socio-economic realities have been taken into consideration by the voluntary organisations, such as Ramkrishna Mission and Catholic church, while attempting to galvanise the tribal economy and to promote social justice. These organisations feel that there is

an ample scope and need for introducing new technology, which could be possible by inducting young and trained entrepreneurs in a village as an agent of social change, who by his innovativeness will help not only to diversify the tribal economy but also in reducing the present level of exploitation by the "Dikus". Thus, the accent is on creating a cadre of dedicated young tribals by training them in agriculture, service and production entrepreneurship. In order to achieve these objectives, these voluntary organisations are working in close co-operation with private organisations, financial institutions and governmental agencies.

In 1969, the Ramkrishna Mission established a training institute, named the Divyayan. It is imparting skill-oriented training in agronomy, horticulture, poultry, animal husbandry, bee-keeping, and so on. In addition, the trainees are taught about health, hygiene and family welfare. The trainees are selected from the far-flung tribal villages of Ranchi district, who are given a six-week motivational course. They learn, by work experiences, the modern techniques in agriculture, animal husbandry, poultry and bee-keeping, which they are made to adopt when they go back to their own villages, with a comprehensive follow-up. During the training, they are involved in community working and joint-living, besides socio-cultural activities to promote fraternal feelings and national solidarity. At the end of the course, the aptitude of the trainees for a particular discipline is assessed and a 12-week intensive training is given to them in that discipline. The volunteers of the Divyayan have also adopted some villages in Ranchi district, involving farmers and farm labourers in different operations of method demonstration.

Hundreds trained

The Divyayan has succeeded admirably in translating its objectives. Hundreds of youngmen trained by it have brought with them new methods of farming, poultry-keeping, dairying, and bee-keeping to the villages. The innovations have been greatly welcomed and have steadily aroused the interest of the tribal farmers to use these methods for their benefit.

However, thet wholesale adoption of these techniques is not possible, because of the high cost of inputs, which the tribal farmers cannot afford, but whenever they get a chance to use these techniques they never lag behind. In order to enable the average tribal farmer to use these new techniques the Lead Bank has made provision of Rs. 8.5 crore in 1981-82 for agricultural loan under the Credit Plan for Ranchi district.

Pioneer of change

The Catholic church is, in fact, a pioneer in the field of socio-economic development of the tribal people in Ranchi district. They have been making sustained efforts towards integrated rural development. The first bank of Chotanagpur was founded by the Catholic church and in recent years its two off-shoots, namely the Vikas Maitri and the Xavier Institute of Social Service, are engaged in fostering socio-economic activities. These include co-operative farming, savings schemes, adult education and entrepreneurship development. The Vikas Maitri was established in 1968. According to Fr. Bogaert, its objectives are (a) to foster better co-operation between the church in rural development and health projects, (b) to undertake joint planning and execution of projects mainly in the form of growth centres, where people want to take development into their own hands (c) to co-operate with other like-minded organisations, voluntary and governmental, in the furtherance of these objectives.

In order to translate these objectives, the Vikas Maitri has set up the growth centres in a number of villages in Ranchi district, manned by dedicated workers. They not only implement various socio-economic schemes, but also carry out basic surveys for formulation of new schemes. The well-known idea of promoting tribal entrepreneurs (self-employed) had originated in the Vikas Maitri. The idea is first to promote individual entrepreneurship and at a later stage organise group or collective entrepreneurship, which is the essence of social system of the Adivasis.

The Vikas Maitri and the Xavier Institute of Social services (XISS), the two sister organisations, are working shoulder to shoulder to achieve the aforesaid objectives. Initially, the accent is more on promoting service entrepreneurship, such as pump repairing, cycle repairing, tailoring, radio repairing, grocery shops, and a few poduction entrepreneurship, such as soap and detergent manufacturing, and flour mills, and so on.

Training of tribals

Able young men, having some formal education, are motivated at the growth centres at village level and then their applications are forwarded to the XISS for systematic training. With the help of a selection committee, consisting of representatives of the Bihar State-Financial Corporation (BSFC), commercial banks, Small Industry Service Institute (SISI), and EDP Faculty of the XISS, the candidates are screened and selected for the six-month entrepreneurship development course. Since 1974, the XISS has been organising two such courses in a year. In the beginning, the candidates are given a two-week motivational course, later theoretical knowledge is imparted to them. This includes book-keeping and costing, marketing, social responsibility of business, project formulation, and so on. For practical training, the candidates are placed under a successful man in the trade/business.

In course of placement for practical training, the EDP staff maintains close touch with the trainers as well as the trainee, and by providing motivational inputs the interest of both trainees and trainers is ensured. This also gives the EDP staff an opportunity to evaluate the quality of the trainers and the interest of the trainees. After completion of the practical training, the EDP staff helps the trainees in obtaining financial assistance, raw materials and other facilities from governmental agencies and financial institutions, who work as link agencies in the task of entrepreneurship development. In the formative period, that is, just after the training, the EDP staff have a system of comprehensive follow-up and they promptly attend to the difficulies being faced by an individual entrepreneur in starting his business. The principles of the EDP course could be broadly underlined as (1) feed the baby, (2) nurse the child, and (3) free the adult. The table set below indicates the success rate of the candidates trained under the EDP Course at the XISS.

Entrepreneur promotion

The success achieved by the XISS in promoting entrepreneurship among the tribals has attracted the attention of some governmental agencies and financial institutions, such as the SISI, the BSFC, the State Bank,

(contd. on page 30)

Socio-economic Problems of the North-East

Dr. Manind Huda

The north-eastern region of India comprises five states and two Union Territories. The States are Assam, Manipur, Meghalaya, Nagaland and Tripura, and the Union Territories of Arunachal Pradesh and Mizoram. Meghalaya, Nagaland and Mizoram once formed part of Assam and later acquired new status during the post-independence period. The region is linked with the rest of the country by a narrow strip of land through West Bengal and is surrounded on all sides by foreign countries. The States and Union Territories as a whole form one of the very backward regions of the nation. Here an attempt is made to highlight certain problems of the region on the basis of its socio-economic characteristics.

THE north-eastern region covers an area of about 2.6 lakh sq. km., which is about 8 per cent of the total geographical area of India. The population, according to the 1971 census, is 195 lakh that is, about 3.5 per cent of the total population of the country. Table 1 gives the data on area, population, density of population, growth rate of population, percentage of rural population and literacy rate of the States and the Union Territories of the region as per the last census.

The population in the region is not evenly distributed as the density varies from six persons per sq. km. in Arunachal Pradesh to 186 in Assam, against 167 in India. Assam comprise 74.7 per cent of the total population of the region. The average density of population in the area is only 77 persons per sq. km. The growth rate of the population is higher than the all-India rate, mainly due to immigration from other parts of India and even from neighbouring countries. The reasons for the increased immigration are the new avenues created by the investment in both public and private sector and expansion of trade and commerce. The average growth rate (1961-71) in the region worked out to 35.03 per cent, while for the entre nation the rate was 24.80 per cent.

The people in the region are rural in character as only 9.44 per cent of the total population is urban. The proportion of rural population to the total, ranges from 85 per cent in Meghalaya to 96 per cent in Arunachal Pradesh, as compared to 80 per cent in India. The towns having a population of over a lakh are Gauhati in Assam, Shillong in Meghalaya, Imphal in Manipur and Agartala in Tripura. The main reason for the slow rate of urbanisation is the tardiness of industrialisation, which is evident from the fact that the 'cities' of the region are primarily non-industrial. In terms of literacy, Mizoram recorded the highest, with 53.5 per cent and the lowest was Arunachal Pradesh, with 11.3 per cent.

The people of this area belong to different tribes. The two main hill tribes of Assam, the Karbis and the Dimasa Kacharies live in the two hill districts of Karbi Anglong and North Cachar hills. The important tribes in Meghalaya are the Khasis, Jaiyantias and the Garos. In fact, there are seven tribes and 22 sub-tribes in Manipur, 39 tribes in Nagaland, 19 tribes and 17 sub-tribes in Tripura and 80 tribes in Arunachal Pradesh. Further, more than 80 per cent of the total population of Meghalaya, Nagaland, Mizoram and Arunachal Pradesh comprises tribals. Though there are certain similiarities in socio-economic characteristics of all the tribes in the regions still there exists certain elements of distinctive social structure. The growth rate (1961-71) of the tribals in the region was low in comparison to the non-tribal population. This may be due to large influx of non-tribes to the tribal-dominated areas.

The population of the States and the Union Territories has been classified according to economic status in Table 2. It can be seen that participation rate in the region has been worked to 30.75 per cent,

Dr. Minirull Huda is Lecturer in economics Sibsagar College, Jayasagar, Assam.

while the all-India rate is 32.91 per cent.

Occupation

Agriculture and allied activities constitute the main source of livelihood of the people living in this region. According to the 1971 census, the number of people dependent upon agriculture is the largest in Mizoram, (83.89 per cent), followed by Arunachal Pradesh (80.30), Nagaland (79.03), Meghalaya (79.03), Tripura (74.37), and Assam (65.77). In occupations other than agriculture, that is in manufacturing, less than 5 per cent are employed. Among the household industries, weaving is worth mentioning, which is popular in all the States and the Union Territories. Of course, petroleum, coal and tea provide employment to a considerable extent.

Table 1

Demographic Data

States/Union Territories	Area 1000 sq. km.	Population (lakh)			Density per sq. km.	Growth rate 1961-71	% of liter-acy
		Rural	Urban	Total			
Arunachal Pradesh	84	4.50	0.17	4.67	6	38.91	11.3
Assam	79	133.36	12.89	146.25	186	34.71	28.1
Manipur	22	9.31	1.41	10.73	48	37.53	32.9
Meghalaya	22	8.65	1.47	10.12	45	31.50	29.5
Mizoram	21	2.95	0.37	3.32	16	24.93	53.5
Nagaland	17	4.65	0.51	5.16	31	39.88	27.4
Tripura	10	13.94	1.62	15.56	149	36.28	31.0
N.E. Region	255	177.36	18.45	195.81	74	35.03	29.01
All India	3,280	4390.46	1091.14	5481.59	167	24.80	29.45

The area available for fixed cultivation is comparatively small, though a major proportion of the population is dependent upon agriculture. Only 14 per cent of the land is available for cultivation, while about 45 per cent is covered by forests. Again, of the total area available for cultivation, over 70 per cent is in Assam, 8 per cent in Manipur and 7.5 per cent in Tripura. In the remaining units, the area available for cultivation is very small. However, in large areas of the region Jhum cultivation, or shifting cultivation, is practised.

Even though agriculture is the principal occupation of the people, the methods of cultivation by and large, continue to remain primitive. Modern technological development is evident to a certain extent only in the plains of Assam, Manipur and Tripura. In the rest of the region, where Jhum cultivation is practised, the respective Governments have already taken up control schemes, by constructing terraces and adopting soil conservation measures. The two main causes for underdevelopment in agriculture in the region are shifting cultivation and limited irrigation facilities. Due to lack of proper irrigation facilities, the use of improved or high-yielding varieties of seeds and fertilisers has also been restricted, because both these inputs are dependent on the supply of water. The most dominant crop of the region is paddy. Besides the field crops, like paddy, cereals, pulses and oil seeds, the hill areas are suitable for growing many varieties of fruits. The tea plantation is restricted only to Assam, which produces more than half of the total tea produced in India, and provides employment to about 4.5 lakh persons.

Table 2

Classification based on economic status

States/Union Territories	% of workers to total Popu-lation	% to total workers		Other work-ers
		Culti-vators	Farm labours	
Arunachal . .	57.65	78.34	1.96	19.7
Assam . .	27.96	55.85	9.92	34.23
Manipur . .	34.57	67.00	3.65	29.35
Meghalaya .	44.17	69.15	9.88	20.97
Mizoram . .	45.61	83.53	0.36	16.11
Nagaland . .	50.76	77.58	1.45	20.97
Tripura . .	27.79	54.41	19.96	25.6
Total . . .	30.75	60.08	9.28	30.64

Natural Resources

The region is rich in forest wealth. However, due to shifting cultivation and very small area under reserved and protected forests, there is less scope for large-scale afforestation. Above all, improper transport and communication facilities to most of the forest areas hamper the development and exploration of the forest resources.

The most important mineral wealth available in the region is petroleum, followed by natural gas. Assam produces about 50 per cent of the total petroleum produced in the country. But a major part of the natural gas produced in the State is burnt up. The other important minerals are coal, limestone, silimi-nite, kaolin and clay. Due to lack of proper exploitation of these natural resources, the region is still comparatively backward. It may be mentioned here that the major industries of the region-tea, coal, plywood and petroleum—were established during the pre-independence period. In the post-independence period, the industries established on a large scale

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Among the household industries, weaving is popular in all the States and Union Territories of the North-Eastern region.

were, two sugar mills, one paper mill, two oil refineries, one jute mill, two cement factories, two hard-board factories, one spun silk mill and two distillaries. Two more paper mills are being set up. Handloom, including Muga and Endi, and bell metal constitute important small-scale industries.

Though the region is endowed with the potentiality of generating electricity, both thermal and hydel, the total installed capacity is only 227 mw The consumers of this region pay the highest rates for electricity in the country, while the distribution is uneven and per capita consumption is very low. The rural electrification programme has lagged far behind in comparison to other parts of the country. Only 10.3 per cent of the total villages in Assam were electrified at the end of 1977-78.

Transport and Communication

Transport and communications are the major bottlenecks in the development of the region. A network of water transport, through the Ganga-Brahmaputra river system, was catering to the needs of the entire north-eastern region through Assam. But due to Indo-Pak war in 1965, this mode of transport was closed. At present, the length of navigable waterways in Assam is about 1,983 km. Rail transport links the region with the rest of the country only through Assam. The total length of railways in the region is 2,215.5 km. The rail links to Tripura and Nagaland are only extensions from Assam. The broad gauge rail link (only 105 km) at present terminates at Jogighopa and New Bongaigaon in Goalpara district of Assam, and extension up to Gauhati is being undertaken. Meghalaya, Manipur, Mizoram and Arunachal Pradesh are yet to have rail link. As rail transport is relatively cheaper than road, railways are preferred for movement of bulk goods, in spite of inconvenience and delay.

The road transport is also far from satisfactory. Because of heavy rainfall and floods, maintenance of the roads in the region is quite expensive and difficult. During the post-independence period, the road development programme has made progress in Assam to a certain extent, but in the rest of the area it is still to achieve a break-through.

The north-eastern region, no doubt, is fairly rich in natural resources. But the pace of development of these resources, as well as the economic development has been hampered by a number of factors. These include inadequate development of infrastructure, isolation of some of the areas, low density of population and non-availability of exact type of technical skills. So, on account of these peculiar problems, a co-ordinated development plan for the States and Union Territories, is urgently needed to bring the region economically on a par with the rest of the country.

An Economical Foundation Technique

THE Central Building Research Institute in Roorkee has developed a technique, "skirted granular which provides economical and technically feasible foundation in non-cohesive soils. It involves construction of skirted granular piles for reinforcing weak soils to improve strength and limit settlements. It may be useful in reducing liquefaction potential in fine-to-medium sturated cohesioness soils.

Farm Financing in Bastar District

T. S. Ramachandran

The fruits of the Green Revolution have not percolated to the weaker sections, particularly the tribal population living in backward areas. The need to uplift the tribals and develop the tribal areas was realised at the beginning of the Fourth Plan, and some ambitious programmes have been launched. But agriculture in the tribal areas, has not witnessed any breakthrough. Apart from the non-availability of adequate inputs, like know how, high-yielding varieties of seeds, irrigation facilities, the most important bottleneck in the development of agriculture in the tribal areas is the lack of finance. Here are the highlights of a survey report on the Bastar cultivators conducted during 1972-73 by the author using the interview method.

THE objective of the survey, among other things, was to assess the requirements (demand) of finance of the 108 agriculturist households, selected by random sampling. The schedules used were specifically framed for the purpose. The main limitation of the survey was, of course, the inadequate sample size. The sample households were stratified as 0-1, 1-3, 3-10, 10 and above hectares, according to the size of their holding. The number of households in each size and the area under operation are given in Table 1.

TABLE 1

Size of holding	No. of households	Area of operation (hectares)
0—1	30	16.24
1—3	34	52.23
3—10	31	134.53
10 and above . . .	13	164 68

It was found that the cultivators in the size group 0-1 and 1-3 hectares, had not demanded any finance. The capital inputs during the year are given in Table 2.

TABLE 2

Head of development	Household investment	Value Rs.	Investment per hectare	Investment per household
Land development	6	345	6.0	3.2
Purchase of land	6	3,000	5.5	28.0
Purchase of bullocks . .	12	6,500	12.0	6.1
Tractors, carts, agri-implements irrigation . .	—	—	—	—

Table 2 gives a dismal picture of investments in agriculture by the sample households. Only 5 per cent of the agriculturists spent some money on land development and purchase of land and only 10 per cent had invested in the purchase of bullocks. No expenditure was incurred by any of the families on the purchase or hire of tractors, carts, agricultural implements, or on the creation of irrigation facilities.

T. S. Ramachandran is Deputy Director of Economics and Statistics, Bhopal.

Even the 5 per cent of the households investing in the land development and 10 per cent in the purchase of bullocks were of the size of 3—10 hectares and 10 and above. No improvement of any kind was made by the other cultivators, whose operational holdings were less than three hectares, and who formed 59.2 per cent of the total cultivators with 18.2 per cent of area of operation. The stagnation in the agricultural sector in this district's economy could very well be judged from the Table 2.

Table 3 gives the details of non-capital expenditure with the sources of finance. The cultivators belonging to all the four groups had incurred expenditure on farming operations.

TABLE 3

Inputs	Source				
	Own	Money-lender	Relatives	Others	Total
Seeds . . (In 1,000 kg)	87	3	10	8	108
Manures . . (In 1,000 kg)	36	—	—	—	36
Fertilisers . .	—	—	—	2	2
Pesticides . .	—	—	—	—	—
Tractors . .	—	—	—	—	—
Rent . . .	—	—	—	—	—
Hired Labour . (100 mandays)	49	—	10	3	62

Table 3 reveals that under non-capital expenditure, the seed was mainly owned or obtained from relatives. Among other inputs 32 per cent of the households used manure and less than 2 per cent households, fertilisers. Labour was hired in the case of 57.4 per cent of the households surveyed. The cultivators with one hectare of land and also with 1—3 hectares, did not use manure and hired labour. These inputs, measured in terms of money, are given in Table 4.

It was found that only about Rs. 58 (per hectare) worth of seeds and manures were invested in growing crops. Professor Rajnar Nurkse, in his forceful analysis, opines : "On the supply side, there is small capacity to save resulting from low level of real income. The low real income is reflection of low productivity, which in its turn is largely due to lack of capital. The lack of capital is a result of the small capacity to save and so the circle is complete." The business of agriculture in Bastar district amply proves his hypothesis.

TABLE 4

(Value in Rs.)

Inputs	Own	Money-lender	Relatives	Others
Seeds	37,800	320	4,350	13,530
Manures	3,360	—	—	—
Fertilisers	—	—	—	250
Pesticides	—	—	—	—
Tractor fare	—	—	—	—
Rent	—	—	—	—
Hired Labour	26,880	—	2,460	450

From Table 4, we find that there were only three inputs for which finance was utilised, namely, seeds, manure and hired labour. It was found that the hired labour and manures were financed by own sources. In the case of seeds, about 30 per cent of the inputs were obtained from the category of 'others'. The data has amply proved that a majority of the tribal cultivators in Bastar district did not incur any expenditure by way of capital investments in their lands, and, even on the non-capital items, the investments were negligible.

Availability of Finance

The availability of finance for inputs for production from different sources is given in the table below :

Table 5

Amount (Rs.)	Own funds	Co-op.	Govt.	Traders	Money-lenders	Relatives
Up to 1,000	87	1	3	6	3	—
1,000 to 3,000	16	4	4	2	1	—
3,000 to 6,000	—	—	—	—	—	—
6,000 and above	—	—	—	—	—	—

Table 5 indicates that the majority of sample households depended on their own funds. Money for only 20 per cent of the inputs was obtained from outsiders. Another feature was that the funds exceeding Rs. 3,000 per household per annum were not procured either from their own resources or from outsiders by all holding groups surveyed.

Rate of Interest

The rate of interest paid for obtaining the inputs is given in the table 6.

The tribal economy still considerably rested on the barter of commodities and services, and most of the loan transactions were carried out mainly in labour and kind. Hence repayment of loans included both capital and interest thereon, and was always expressed in ratios and times and not in absolute amounts of money. Living in a subsistance economy, the tribals languish in debts even to purchase agricultural requirements, like seeds. The weak financial position of the tribals provided opportunities for large-scale exploitation by the local traders and money-lenders. Our survey results have also shown that even though the investments were very low they were very costly. About 50 per cent of the selected households were paying interest at the rate of more than 50 per cent per annum for the inputs.

The tribal economy has many paradoxes. It is a common knowledge that the small cultivators all over India are indebted, particularly the problem is very acute in the tribal areas. A survey conducted in the scheduled areas of the western region of Madhya Pradesh has revealed that the incidence of indebtedness was as high as 83 per cent of the families covered. Whereas our survey results have shown that in Bastar indebtedness did not appear to be a major problem. The problem is lack of desire on the part of the tribal cultivators for the capital required for the investments. This is a psychological factor which acts as a socio-cultural barrier for development.

Lowest Indebtedness

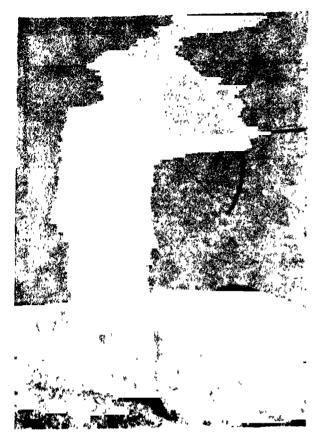
The debt and investment survey conducted by the Reserve Bank in 1971, revealed that the per household indebtedness in Bastar district was the lowest in the State. The 26th round of NSS on household assets and liabiilties by regions, also revealed that the average amount of liabilities per household in the eastern region of M.P. which comprises Bastar district was the lowest in the State.

More recently, in 1976-77, an indebtedness survey was conducted in the Tribal Development Agency at Konta and the Dantewara Block of Bastar district. The survey showed that in the Konta Block, out of the total of 27,124 households, only 1,170 were indebted. Of them, 644 household belonged to the Schedule Tribes. The number of indebted tribal families hardly worked out to 2 per cent of the total households. In the Dantewara Block, only 5 per cent of the households were found to be indebted.

Even though the Bastar cultivators are not as indebted as other tribal cultivators elsewhere, the situation does not appear to be happy, as the absence of indebtedness reveals only the scanty attention being paid to the business of agriculture by tribal people in Bastar district. Efforts are, therefore, to be made to see that the Bastar people take agriculture more seriously and they should be asked to increase their investments in land.

Table 6

Source	Up to 5%	5—10	10—50	50 & above
Co-operative	—	—	4	—
Government	—	3	—	—
Traders	—	—	—	6
Money-lender	—	—	—	3

The main problem of agricultural financing in the district is to see that the quantum of investment in agriculture, both in the shape of capital and non-capital inputs, is increased substantially. Priorities in the tribal economy in Bastar district are different, and the administration may do well in tackling this unique probe by applying appropriate solutions.

A Siang tribal zeroing during the hunt.

A Reangs tribal in Tripura eking out a living by basket making

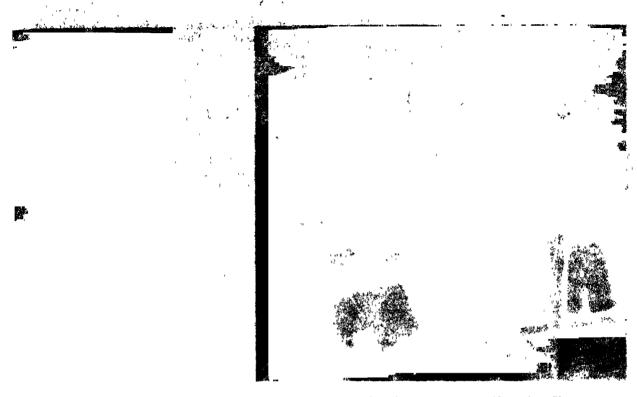
Vignettes of Tr

WE must approach the tribal people with affection and friendliness : We must let them feel that we come to give and not to take something away from them. That is the kind of psychological integration India needs'" Jawaharlal Nehru has said. On another occasion he said he would prefer to be a nomad in the hills, and has observed that the tribals were more democratic and disciplined.

The Prime Minister, Smt. Indira Gandhi, once observed : "It is our duty to see that the backward communities are no more neglected. They are to be made fellow travellers in our way to progress. Their uplift is a must to make our country strong, for disparity is the root of all troubles". Addressing the conference of State Ministers in charge of Backward Classes Welfare in 1975, she said, "It has been our policy from even during the independence movement that we should strive not only for political freedom but for a freedom which brings social justice to all sections of our people. And we have placed special emphasis on the position of the Sche Scheduled Tribes."

Constitutional saf provided to protect t bes from social inju tion. In furtheranc set out in article 4(tion. The tribal p fined in Article 4 tion, which says, : promote with specia tional and economi weaker sections of t particular, of the and the Scheduled ' protect them from s all forms of exploit

Progress has bee presentation of the and for reservation Central and State Public Sector unde

In Class I and II cent vacancies are tribes. Reservation portion to the popul in the local area in t ment to Class III s tate adequate repre sions in age limit

A tailoring class at Along in Siong district of Arunachal Pradesh

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standards, etc. have been provided for.

The number of IAS and IPS Officers belonging to Scheduled Tribes increased from a mere four in 1954 to 386 in 1973. In order to provide intensive coaching to the Scheduled Caste and Tribe candidates preparing for the competitive examinations, training centres have been set up in various states. There are coaching and guidance centres in the employment exchanges at Delhi, Kanpur, Jabalpur and Madras to provide courses in confidence building and interview techniques for class III posts.

The percentage of literacy among the Scheduled Tribes has gone up from 8.54 per cent in 1961 to 11.29 per cent in 1971. It was only 0.7 per cent in 1931. While the percentage of literacy for the whole country is 29.45, the percentage of literacy in the State of Meghalaya and the Union Territories of Lakshadweep and Mizoram, where more than 80 per cent of the people are tribals, is above the national average. In these places, literacy among women is well above the mark of the national average which is 18.70.

Pastorale at Belangi tribal village near Ranchi

Drying the bidi leaves is the daily chor of this Khadeya tribal of Raigarh

Intensive efforts are being made to bring the tribals into the national main-stream by means of cultural integration. Tribal research institutese have been established in most of the States for conducting research in the tribal arts, customs, languages and culture.

The Tribal Development Blocks Programme was launched at the end of the Second Plan to bring about intensive development of the tribal areas. These were designed to accelerate the process of improvement in Generally, a block covered a population of about 25,000 consisting of 66-2/3 per cent of the Scheduled Tribes and an area of about 384 to 512 sq. km. At the end of the Fourth Plan there were 504 tribal development blocks covering 39 per cent of the tribal population. The total investment by the Centre and States during the Fifth Plan for the development of tribal areas is estimated at about Rs. 1,500 crore.

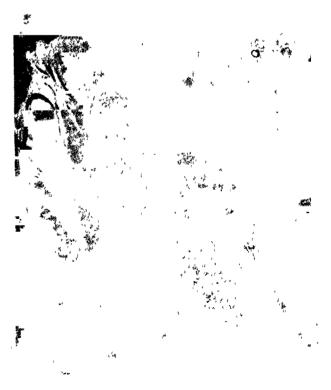
More than 90 per cent of the tribes are engaged in agricultural pursuits. Andamanese, Onges and Shompens of Andaman and Nicobar Islands are the only tribes who are engaged wholly in forestry and food-gathering. Tribes like the Birhor and Malapen-daram are predominently engaged in forestry and food-gathering. Many of the tribal communities in Andhra Pradesh, Assam, Bihar, Orissa, Nagaland, Manipur, Tripura, and Arunachal Pradesh practise shifting culticultivation, that is every year new land is taken up 'or cultivation and the cultivated land is abandoned.

The problem of tribal land management is land alienation. Money-lenders and superior farmers have over the centuries exploited the poor tribals. They are steeped in indebtedness due to large-scale exploitation by money-lenders. Realising the garvity of the problem legislative measures were taken by the Government to protect the tribal people from the clutches of the money-lenders.

The study team appointed by the Ministry of Agriculture to examine the working of the cooperatives in the areas covered by the Tribal Development Agencies, recommended, among other things, that the primary society which deals directly with the tribals should provide all the important servicese required by them so that the tribals are not required to approach too many institutions for assistance. It also recommended that the Reserve Bank and the Naional Cooperative Development Corporation (NCDC) should provide financial support for tribal cooperatives. The recommendations of the study group have been broadly accepted by the Government of India, the Reserve Bank and the concerned States.

State level cooperative tribal development corporations and federations have so far been established in Andhra Pradeseh, Bihar, Madhya Pradesh, Maharashtra and Orissa to serve as apex organisations for marketing of minor forest produce and also for supply of essential consumer goods. The NCDC is assisting tribal cooperatives in various ways, like constrction of storage godowns, setting up of processing units, etc.

Interior and inaccessible areas in the tribal tracts have been opened up with roads over the years since independence. In Arunachal Pradesh, all the five district headquarters have been connected by black-topped roads and so also the three sub-divisional headquaters. Madhya Pradesh and Rajasthan have made commendable progress in building of roads in the tribal areas.

Agnja Tribal of M.P. engaged in iron-smelting.

A Case Study of South Wynad Tribals

Dr. B. A. Prakash

Kerala has 1.25 per cent of tribal population, most of which is in Wynad region. The author notes that Kuruman tribe is the most advanced among the five tribes and is interested in education. The study inpoints that only five persons out of 77 are engaged in own farming while others get only two to three days of employment a week which was also attributed to the implementation of Government Schemes for tribes. The study exposes the tribals ignorance of the Government schemes, their sheer poverty, and their social, educational and economic backwardness.

KERALA has about 36 tribal communities and a tribal population of 2.69 lakh as per the 1971 census, accounting 1.26 per cent of the total population of the State. Though a few studies have come out on the tribal problems of Kerala, they have not examined the employment and levels of living of the tribal people. In this study an attempt has been made to examine the employment, wages, levels of living and other economic problems of the tribal people, based on a survey of 48 tribal households in South Wynad. The Wynad region comprises of two taluks, North Wynad of Cannanore district and South Wynad of Calicut district, and accounts for about 28 per cent of the total tribal population in the State

Family Size and Literacy

The survey was confined to places in South Wynad, such as Chuthood, Kalangappara, Pongilie, Alathur, Muthanga, Noolpuzha, Punchavayal and Chingery. In the survey we come across five categories of tribes such as Paniyan, Kuruman, Uraly, Uraly Kuruman and Naickans. The total population of the 48 households was 284. Table 1 shows the tribe-wise distribution and the total population of the households covered. The family size of the households ranged from two to 16 persons and except three adults, all were illeterate. It was found that out of 129 children, 35 were going to schools. A tribe-wise comparison revealed that children belonging to Kuruman tribe were mostly interested in schooling, compared to those belonging to other tribes. This was mainly due to the fact that the Kurumans were the socially and economically advanced tribe in the area. The children of Uraly Kuruman and Naikan tribe were found not going to school. Though the tribal children were given monthly stipends in addition to free schooling and mid-day meals, it appeared that except the Kuruman tribe none of the parents belonging to other tribes were keen to send their children to schools. Out of the 35 students, 20 were in primary classes, 11 upper primary, three high school and one in college.

Dr. Prakash is in the economics department, University of Calicut.

It was found that including 14 women 17 persons were engaged in some remunerative work, either as casual agricultural labourers or in their own farms or collecting some forest materials. Out of the 77, 45 were employed as casual agricultural labourers in government plantations and other private farms. Of the rest, 8 were reported working as forest labourers and two as elephant trappers in the forest department. Only five persons were doing their own farming. The remaining persons were working as woodcutters, grasscutters or engaged in sand collection. We have also met a couple working as peon and sweeper in the local tribal welfare office and school at Chinegery. An enquiry about the number of days they got employment, revealed that a majority of them got two to four days employment in a week.

Wages

The agricultural labourers working in the government plantations were given a daily wage of Rs. 7 to 8 per male and Rs. 6 to 7 per female. The labourers working in private agricultural operations were provided with a daily wage of Rs. 5 to 6 for males with some food, such as a morning coffee and rice gruel or rice meals as lunch. The female labourers were paid a lower wages of Rs. 3 to 4. It was reported that the persons employed by the forest department for deforestation work were getting a daily wage of Rs. 7.50 to 8.50. The woodcutters hired by private timber merchants were paid a daily wage of seven to eight rupees. It was reported that about six persons were engaged in cutting grass from the forest for sale, and earning a daily income of Rs. 6 to 8. A few of the informants told us that they used to go to collect firewood from the forest when they did not have any other employment and usually earned an income of about Rs. 4 per day.

Number of households covered

Tribe	House-hds covered	Population
Paniyan	20	130
Kuruman	14	91
Uraly	6	35
Uraly Kuruman	3	14
Naickan	5	24
Total	48	294

One of the main conclusions drawn from the study is that the present employment opportunities available in these areas were mainly created as a result of the implementation of some of the tribal development programmes of the State Government. It is significant to note that out of the 77 engaged in some remunerative employment, 48 were working either in government plantations, forest department or other activities connected with government schemes. Thus the State's tribal development programmes had a good impact on the employment and income of the tribal people in South Wynad.

A majority of the households possessed land ranging from 0.20 hectare to 1.6 hectares, mostly paddy land. The Kuruman tribe possessed more land compared to other tribes and engaged in systematic farming, especially at Puuchavayal and Alathur. Of the 26 households possessing land, 7 had land as ancestral property, and two through deforestation. Though 17 households got land as a result of government schemes, a good part of the land given to Paniyar and Uraly households were kept uncultivated.

An enquiry about the items of food and number of times the household took food has revealed alarming facts. It was found that one-fourth of the tribal households were on the verge of starvation. Since the respondents were illiterate people, specific questions were asked to know the items of food consumed by them during the previous day of the survey. It was reported that out of the 48 households, members of the two households had not taken any food during the day. In the case of another five households, they subsisted on one meal, viz., rice gruel. Another 12 households had two meals, i.e. a jaggary, coffee in the morning and rice gruel in the evening. The rest 29 households claimed that they had three meals, mostly jaggary, coffee or left-overs as breakfast, rice gruel or cooked rice for lunch and dinner. In the case of earning adult members of the households they used to get rice gruel from the employer or take meals from the nearby shops in the noon. The children and the female members in the households were forced to starve throughout the day and most of them got food only in the evening.

About one-fourth of the households had a monthly per capita expenditure on food ranging from Rs. 5 to 10, which means an annual per capita expenditure of Rs. 60 to Rs. 120 at the current price level. Another 12 households had a monthly expenditure ranging from Rs. 10 to 15.

One of the reasons for very low per capita expenditure on food items was due to the diversion of a good part of their scarce income for smoking, chewing and drinking. It is interesting to note that almost all adult members of the tribal households, irrespective of sex, were addicted to smoking and chewing. A good number of the adult male members were using liquor, like arrack and toddy. Because of the diversion of their income for these purposes, they could spend only a part of their income on food. We have estimated that each household spends from 25 paise to Rs. 2 per day on Bidis, tobacco and arrak. We have also classified the households into three categories, viz., (1) those who use bidi alone, (2) those who used bidi and tobacco, and (3) those who use bidi, tobacco and arrack or toddy. It is found that majority of the households spend a sum of 75 paise or more for these purposes.

An enquiry about the clothing of the tribal people revealed that a majority of them had only one pair of cloth, in most cases a small *dhoti*, an inferior quality of sari. Members of 15 households had two pairs of

(*Contd. on page* 26)

EDUCATION and training are necessary adjuncts to the introduction of a technology requiring skilled operators. In this role, education is an element in the development process, rather than an independent cause of change. Education, also valued for its ideological power, serves, in effect, to extricate, people mentally from the ideas, expectations and values of their own culture and implants in them new trends and winds of change from a more developed culture. Education, thus, is a key to human progress, a crucial input in economic development and a vehicle for effective adoption.

"If education is considered only as an objective for the purpose of securing white collar jobs," says a Meghalayan, "then it is certainly not more important than economic uplift. However, if education is regarded as a method, then it is certainly more important than economic uplift, because such persons will be educated not only in the academic sense, but will also develop greater civic sense, social obligations and so on, which are all contributory factors towards economic uplift".

Attitude of The Tribal Students

J. C. Singha

The interesting study spotlights the altitude of the Meghalayan tribal students towards the, place, people and teachers. The reference year is 1977, and the study is related to the urban areas of Meghalaya selected at random. It is based on surveys conducted in four schools, of boys and girls, at Shillong and three at Tura. Every third student of eighth and ninth classes was involved in the survey.

Education is a purposive and systematic endeavour to produce an individual, who by understanding the meaning of what he knows, by feeling what others think, and by building within himself a replica of the world outside, has attained excellence. The capability of adjustment in society is the basic necessity of an educated man, and we are to analyse the functioning of the Meghalayan schools in the light of this aspect and the extent to which they go in moulding the personality of their students according to changing conditions. We shall study the attitudes of the Meghalayan tribal students towards the place, people and teachers.

Liking For Place

The net rating of the students of Garo Hills district in regard to the liking for the place was 187, against 182 in the United Khasi and Jaintia Hills. In all, it is 369 for the State. The net rating of 187 was the highest in Garo Hills out of maximum of 222 while in the United Khasi and Jaintia Hills, it was 182. Thus, the students of the districts/State had a liking for the place where they were studying. In Garo Hills district, 78.4 per cent of the students liked the place very much, against 13.5 per cent who just liked the place, 6.1 per cent expressed no opinion and 1.7 per cent disliked the place of study very much. In the United Khasi and Jaintia Hills, 73.87 per cent of the students liked the place very much, 16.2 per cent just liked the place and 9.9 per cent expressed no opinion. Thus, 76.1 per cent liked the place very much, 14.8 per cent just liked it, 8.1 per cent expressed no opinion and 0.9 per cent disliked the place.

Glamour of City Life

In the Garo Hills, 59.46 per cent of the students liked to go to cities for living, 40.54 per cent wanted to stay at the home district. On the other hand, in the United Khasi and Jaintia Hills, 84.68 per cent liked to go to cities for living and 14.41 per cent, to stay in the home district. However, 0.90 per cent of the students did not express any opinion. On the whole, 72.07 per cent of the students liked to go to cities for living, as against 27.47 per cent who liked to stay at home, and 0.45 per cent who did not express any opinion. Thus, with education, it appeared, the city life held a great glamour.

The students opinions are given weightage in social matters. In Garo Hills, 71.17 per cent of the students believed their opinion was given weightage by others on account of the fact that they were educated. The remaining 28 83 per cent said that no special consideration was given due to their education. In the United Khasi and Jaintia Hills, 75.68 per cent of the students said their opinion was given weightage and the remaining 24.32 per cent gave negative answer. On the whole, 73.42 per cent of the students in the State said their opinion was given weightage in social matters and the remaining 26.58 per cent believed it did not carry any weight. This indicates that the youngsters have a say in certain social affairs and hence such answers.

The students had a positive opinion about the people of the area. Of the total rating of 250 in Garo Hills, the scores for honest, hardworking, gentle and capable of adjustment were 79, 73, 50 and 48, respectively. In the United Khasi and Jaintia Hills, the maximum possible rating is 419—for honest it was 99, dishonest —7, hardworking 107, lazy —5, uncultured —3, gentle 105, adamant —2, and capable of adjustment 108. Against this, the corresponding data for the State was 178, —7, 180, —5, —3, 155, —2 and 156, out of maximum possible rating of 652. If the function of education is to form an adjustable personality, the data reveal that it was about one-fourth of the maximum possible rating.

J. C. Singha teaches at Government College, Tura.

The teachers in the State are Khasis, Garos, other tribals and non-tribals. Some of the teachers are local people and some are outsiders. Their opinion regarding the place varied. Of the net rating of 71 for the whole State, the United Khasi and Jaintia Hills had a net rating of 36, very good 16 and good 7. In Garo Hills, it was 35, 16 and 3, respectively. As such, the teachers liked the place.

Big City Syndrome

As the entire State has no big city, a majority of the teachers expressed their opinion to go to the cities to gain experience in the socio-economic life of the city people. Among the teachers in Garo Hills, 60.86 per cent wished to go to cities, as against 47.97 per cent in the United Khasi and Jaintia Hills. For the whole State, it worked out to be 54.76 per cent, indicating that the teachers of Garo Hills were more bent on city life. This may possibly be due to absence of cities in the district.

About the people of the respective areas, the teachers of the two districts had no common opinion. Some of the teachers expressed their opinion about the people as honest, hard-working, gentle and capable of adjustment. For the whole State, the rating of teachers for the local people was 26. Of this, the rating of Garo Hills teachers was 14, and those of the United Khasi and Jaintia Hills 12.

As far as hard work was concerned, the total rating was 9 in Garo Hills, and 14 in the United Khasi and Jaintia Hills, totalling 23. The reason for low rating about hardwork may be attributed to lack of employment opportunities during the lean agricultural season. The teachers in Garo Hills and the United Khasi and Jaintia Hills gave a rating of 8 each for gentleness, the total rating being 16. This may be due to the simple and gentle nature of the people As regards the capability of adjustment, the score was 9 in each district. This may be attributed to trade and cultural relations the Meghalayans have with the people of the hills and the plains of Assam and elsewhere.

Teachers' Social Standing

The social standing of the teachers in the State is quite high. In Garo Hills district, 51.72 per cent of the teachers were respected, while 13.79 per cent were sought for advice, and 31 per cent were treated as their own people. In the United Khasi and Jaintia Hills, 66.67 per cent were respected and 9.52 per cent were sought for advice. Thus, for the State, 58 per cent of the teachers were respected, 10 per cent were sought for advice and 18 per cent were treated as their own lot. Evidently the teachers enjoyed respect and status in the local society

The teachers assessment of the tribal students' intelligence was very relative, inasmuch as every teacher had a different yardstick for measuring students intelligence. They had not been given any IQ test. This assessment was purely subjective, subject to bias and prejudice of the teachers concerned. Yet, it cannot be said to be widely off the mark, as teachers were in direct contact with the students, and they supervised their day-to-day work They were, therefore, in a better position to give a verdict on the students level of intelligence. Their views may, therefore, not be taken as arbitrary or superficial. Allowance for some bias, it may be taken as indicating the general assessment of the IQ of the students in categorising them as higher, medium or lower.

In Garo Hills, 26.09 per cent of the teachers said the tribal students were intelligent, 56.02 per cent said they had medium intelligence and 4.35 per cent said they had low intellect. In the United Khasi and Jaintia Hills, 73.68 per cent of the teachers said they were intelligent, 15.79 per cent said they had medium intelligence and none had low intellect. Thus, 42.62 per cent of the teachers expressed their opinion about tribal students as intelligent, 38.10 per cent as medium and 2.38 per cent as low intellect.

In Garo Hills, 65.22 per cent of the teachers held the view that the tribal students were serious in their studies, against 34.78 per cent of the teachers who opined that they were not serious. But, in the United Khasi and Jaintia Hills, 100 per cent of the teachers held the view that the tribal students were serious in their studies. Thus, for the State it worked out to be 80.09 per cent and 19.05 per cent, respectively.

No Time for Home Work

In Garo Hills, the tribal students were not well up in their studies, because they found no time to read at home. They are busy in Jhum cultivation and, hence, they study only at the school. Moreover, the percentage of literacy in the district is low, as compared to the United Khasi and Jaintia Hills, and, therefore, they do not have cultural background for formal education. If the parents are illiterate, they do not give sufficient importance to their children devoting time to lessons. Naturally, parental vigilance is lacking in most of the cases. But in comparison to the adverse household conditions, a majority of the teachers felt that the students were serious about their lessons, and, because of medium intelligence, they followed their lessons, not as quickly as when the students made efforts on their own.

We have seen that the teachers' assessment of the intelligence of the tribal students was not relative in its nature, but was an absolute judgement by the teachers according to their own standard of measurement. Therefore, the possibility of bias could not be ruled out. Since the very nature of the question was comparative, the error in standard measurement by the teachers was neutralised for the same error for the two groups. Thus, the only bias that could creep into this subjective judgement was the prejudice of one group of teachers against the other group of students.

The teachers' assessment of the comparative intelligence level of the average tribal and non-tribal students was not unanimous. The teachers of Garo Hills held the view that the tribal students had comparatively lower level of intelligence than the non-tribals. On the other hand, 100 per cent of the teachers in the United Khasi and Jaintia Hills said that the tribal students had the same level of intelligence as the non-tribal.

No Student Unrest

With regard to the sense of discipline among the tribal students, the rating was very high. All the teachers of the United Khasi and Jaintia Hills and Garo Hills had the same opinion about the sense of discipline of the tribal students. The opinion of the teachers was unbiased, becuase among the tribal students discipline comes from their training in traditional institutions and village community life. They have this training in discipline since their very childhood This may also be supported by the fact that student unrest is almost unknown among the tribal students of the State.

The teachers of the State liked the tribal students. This may be attributed to the simplicity and obedience of the students. In Garo Hills, out of maximum possible rating of 46, the scoring was 38, and it was the same for the United Khasi and Jaintia Hills. Though two teachers did not express any opinion in Garo Hills, yet the score in the district was near maximum. Besides, there were many other reasons for the liking of the students by the teachers. In Garo Hills, 28.21 per cent of the teachers liked the students because they were honest and faithful, "because they were tribals", and "because they were tribal Christians"; 15.38 per cent because they obeyed; 10.26 per cent because they took their lessons seriously; 7.69 per cent because they were clean, and 2.56 per cent because they helped with material things. In the United Khasi and Jaintia Hills, 45 per cent teachers liked the students because they were honest and faithful, followed by 40 per cent because they were tribals and 15 per cent for other reasons.

Thus, in Meghalaya, the teachers liked the students because they were honest and faithful (33.93 per cent) followed by 25.42 per cent because they were tribals, 11.86 per cent because they were tribal Christians, 10.16 per cent because they obeyed, 6.78 per cent because they took their lessons seriously, 5.08 per cent because they were clean and other reasons and 1.08 per cent because they helped with material things.

Analysing the data, we find that the teachers liked their students on account of honesty and faithfulness, because of fellow feeling, because of having the same faith, because of obedience and so on. It is interesting to note here that some teachers admitted that they gained materially from their students. The practice is not healthy. This may be due to lack of visits of the inspection authorities.

Lax Inspection

Inspection of the schools by the concerned authorities is very important, not only from the administrative but also from academic point of view. Visits of appropriate authorities may make the teachers do their work honestly and efficiently. The teachers may also place their grievances before the higher authority which may be helpful in many ways.

Hundred per cent of the teachers of Garo Hills, 74 per cent of the United Khasi and Jaintia Hills, and, thus, for the State 88.10 per cent of the teachers, felt the necessity of the visit of the inspecting authorities. Of these, 91.30 per cent of the teachers in Garo Hills, 73.68 per cent in the United Khasi and Jaintia Hills, and thus, 83.33 per cent for the State, liked such visits. About 12 per cent of the teachers of the State did not feel the necessity of the visit of the inspecting authorities as against 2.38 per cent (5.26 per cent in the United Khasi and Jaintia Hills and none in Garo Hills). Altogether 14.29 per cent of the teachers (8.70 per cent in Garo Hills and 21.05 per cent in the United Khasi and Jaintia Hills) had no opinion on the visits of the inspecting authorities, who disliked such visits.

Students' Likes

All the students of the two districts liked their tribal teachers. The net rating was 111 for each district. Of the 111 students in Garo Hills, 67 students liked the non-tribal teachers and 44 students disliked them. Thus, the net rating was 23. On the other hand, in the United Khasi and Jaintia Hills, 55 students liked the non-tribal teachers, 16 disliked and 15 did not express any opinion. Thus, the net rating was 15. In Garo Hills, out of 111 students, 87 liked the Christian teachers and 24 disliked them. The net rating thus was 63. In the United Khasi and Jaintia Hills, 43 students liked the Christian teachers, 58 disliked them and 10 did not express any opinion. Thus, the net rating was 15.

The teachers' contribution in shaping the future society cannot be minimised. The estimation of teachers' contribution in guiding the future generations and its worth can be gathered through the attitude of the students. Moreover, we should also know which class teachers are more popular among the students. Since the teachers' role in building the future generations is crucial, we should see him through the eyes of his pupils. Then only we can know his shortcomings.

Teachers' Role

The teacher is a very important member of the society. He is entrusted with the raw brains of the future generations, and it is he who has to shape it. On him, therefore, lies the burden of shaping the future of the society, for his products will be the components of the future society and the parents of still future generations.

Education changes the life-ways and thought processes of the tribals. As such, it is one of the prime movers of the social change. However, the knowledge implanted in them through education unbalanced. The introduction of appropriate technology in order to meet the leeway is urgently necessary. It would, thus, involve something wider : a new method of thinking and a new approach to the problems.

The Real Assets

STRONG will and self-confidence are the pillars of success. This has once again been proved by the story of a young entrepreneur, Shri Kutubuddin Ahmed of Naharkatia in Dibrugarh district, Assam. He hails from a very poor family. With the death of his father he was compelled to leave his schooling and shoulder the burden of his seven-member family.

A simple machine for making "sewoi" (vermicelli) is a common feature in the Muslim families. Finding no other way to maintain his family, Shri Ahmed decided to utilise this "sewoi" making machine for earning his livelihood. He started producing "sewoi" in his own way and selling it on foot in the Naharkatia area. Later, he came into contact with the Entrepreneurs Motivational Training Centre (EMTC), Tinsukia, and under its guidance he gathered more knowledge about the business and became more confident in his efforts.

He obtained a loan of Rs. 5,000 through the EMTC and improved his enterprise in his old thatched house. He managed to get power supply to run the machine. Recently, Shri Ahmed has taken up a new venture of making cold drinks. Shri Ahmed has said that he has found good market for both the commodities and thereby has increased his earnings.

F.P.O., Dibrugarh

The Kolta Tribal of Tehri-Garhwal

A. K. Srivastava

NEXT to Africa, India has the largest concentration of the tribals in the world. The total population of the tribals in U.P., who mostly live in hill areas of Uttarkashi and Kumaon divisions, Terai region of north U.P. and southern-most districts of U.P. adjoining Madhya Pradesh, is to the tune of more than six lakh. The Tehri-Garhwal hilly district consists of ten development blocks. The tribals are confined only in a single block, namely, Jaunpur. The Jaunpur block is divided into seven pattis: Saklana, Dasjula, Chhaijula, Paligad, Silwad, Laloor and Idwalsyun.

The tribals are spread out only in three pattis, Silwad, Laloor and Idwalsyun. The Laloor patti consists of three villages, Devan, Nangaon and Khairad while Silwad patti had only two villages i.e. Tator and Kharson. No information was available about Idwalsyun patti. According to a survey made by Harijan and Social-Welfare Department, Narendra Nagar during 1974; the distribution of tribal families in these villages is given in the Table.

Distribution of Tribal families

Name of the village	Total number of families in the village	Total No. of tribal families in the village
Devan . .	26	5
Nangaon . .	28	9
Khairad . .	30	13
Tator . .	19	10
Kharson . .	38	16

A. K. Srivastava, is a Research Associate at G. B. Pant University, Pantnagar, U.P.

The tribal people (Jaunsaris) of Tehri-Garhwal district (Jaunpur block) are known as Koltas. There are three types of the Koltas, namely, Khandit Mundit, Mat and Sanjayat. The first type is meant for the exclusive use of a particular Khasa family. He is chained to the family to such an extent that on a death occuring in the family, he has to get himself clean-shaved and observe mourning for a prescribed number of days. The second type signifies the heavily indebted Koltas who have to work at the money lenders' place in lieu of interest. The majority of the Koltas belong to this class. Within the third category, come those Koltas who are at the service of the whole village. They are used as messengers to announce births and deaths. They serve various families by turn.

The Khasas, i.e. Rajputs and Brahmins of the hills, do not have anything common with the Rajputs and Brahmins living in the rest of the country, except that the priests officiating at the quaint religious ceremonies of Jaunsaris are drawn from amongst the Khasa Brahmins. The Khasa Rajputs and Khasa Brahmins, do not hesitate to intermarry among themselves. Similarly, the artisan classes and untouchables should not be mixed with their synonyms in the plains.

Jaunsaris are known as Hindus, but there is very little in their way of life and beliefs which can be considered to be characteristically Hindu. They commonly practise both polygamy and polyandry. Though their notions about marriage and sexual behaviour are so different, they have been able to evolve a fine social adjustment in which jealousy among co-wives and co-husbands is extremely rare. Women are very well looked after and almost never ill-treated. Divorce is allowed and is easy. Married women have practically complete freedom of sexual association when they are in their parental village, though they are expected to be loyal to their husbands when living with them.

The Gods traditionally worshipped by Jaunpuris are Pandav, Bawa, Shivji, Kedarnath, Nagdewta and Devi. They practise animal sacrifices, unusually goats on Magh sankranti. In Idwalsyum, Laloor and Silwad pattis there is visible practice of untouchability.

The economic condition of the Koltas, who are traditionally assigned to till the land for the Khasas, is extremely pitiable and pathetic. Their lot is cast with that of their controlling Khasa families who treat them as their bond slaves. In return for their services, the Khasa give small patches of land to the Koltas for subsistence. However, the earnings from land being almost always inadequate, a Kolta family has to approach its master for loans, who is only too glad to oblige, for lending further strengthens his claim and control over them. The rate of interest charged is about 75 per cent per annum which is terrible by any standard. The money spent by the Khasas on marriages, deaths and birth is also debited to their account. Taking advantages of the Kolta's illiteracy and ignorance, more often than not, the Khasas do not maintain correct accounts and manipulate to magnify the loans to their advantage. The result is that a Kolta is never able to repay the debt which on his death passes on to the next generation. Once caught in the web of indebtedness, a Kolta family can rarely hope to get out of it. Today many of the Koltas hardly remember if ever they were free from debt.

The Koltas form the lowest rung of the social ladder. The social disabilities inflicted on them are numerous. They are treated as untouchables. They cannot enter the temples. They cannot be admitted within the threshhold of a Khasa house. They work on the ground floor of the house in the company of the cattle which are tied there. It is considered derogatory in many Khasa villages to allow a Kolta to enter the village with his shoes on. Use of gold ornaments by the Kolta women is forbidden by custom.

It is shocking to find that many of the Khasas are the local agents of traffickers in women. The result is that not only do they encourage the Koltas to sell their girls to the procurers or send them to the plains for prostitution. Instances are not wanting when they have themselves sold Kolta girls of families indebted to them, to secure repayment of loans, real, exaggerated or imaginary. This step is usually taken to teach a lesson to a serving Kolta family trying to make a bid for freedom.

Immoral traffic in women and girls of the untouchable and artisan classes in general and of the Koltas in particular has assumed large proportions. According to a survey conducted a few years ago, 31 villages of Jaunsar-Bawar, 26 of Jaunpur and as many as 65 Rawain villages were affected. One of the most disquieting aspects is that as many Brahmins and Rajputs have assumed the role of traffickers or their agents, it has become extremely difficult to bring the culprits to book under the Suppression of Immoral Traffic in Women and Girls Act.

It is curious to note that the central problem of Jaunpur's rural life present a unique case of what is called "circularity of causation". The economic problems are both the cause and consequence of the social evil such as social distance, social stratification and discrimination. Thus bonded labour is both the cause and effect of the rural indebtedness. It is the cause because low income associated with bounded labour compels the person to borrow and add to his position of indebtedness. Similarly, immoral trafficking in women is both social and economic evil. Thus, any desire of studying the problems of rural life must be associated with awarensss of "multiplicity and circularity of causation".

Bonded labour is precisely a web of caste relationship. Usually poor Harijans and Koltas are bonded to rich Rajputs and Brahmins.

The scheduling of the Jaunsaris has ushered in a new era for the Koltas as well as other Jaunsaris. It is essential that the similar people of Rawain and Jaunpur, too should be declared as Scheduled Tribes in the near future so that they, too, may look forward to their future with hope and get rid of their present economic plight, social suppression and widespread illiteracy. □

A Case Study of South Wynad Tribals

(*Contd from page 20*)

clothing. But it seems that the information does not reflect the correct picture, since most of them had only one pair of clothing.

A few of the respondents told us that they were suffering from stomach diseases, mainly because of the fact that they were forced to use river or stream water for drinking and cooking purposes. It was pointed out that the water in the rivers and streams was polluted because of elephant excretion in it. Among the 48 household covered, 16 were using steam or river water for drinking purposes, especially those living in Muthanga, Pongilee and Noolpuzha. The ten households covered in Chingery colony were provided with water supply. In places, such as, Punchavayal and Alathur, where Kuruman households were living in groups, they were getting water from wells.

The study revealed that the incidence of illness among the people was very high. Of the 48 households covered, we found that at least one person was suffering from some illness in the case of 16 households. It was reported that only in the case of 10 households, they used to go to government hospitals for treatment, while the rest of the households believed in the power of village priest or resorted to witchcraft for cure. Except in Chingeri colony, in all other places the government dispensaries are located about 5 to 8 km. away. Most of them were not going to hospitals because they could not afford it. In many cases, the adult members were reluctant to go to dispensaries with the sick members of the households because they had to forego their daily wages, the only source of income.

Except the houses built by the Government at Chingery, the rest of the dwellings were grass-thatched huts. In two colonies we covered 13 houses which had been constructed by the Government and given to the people. These houses had two rooms excluding the front varanda and have a value of about Rs. 3,000 each. The rest 35, were typical tribal huts, with mud walls and grass roofs. A tribe-wise comparison of the huts shows that Kurumans had comparatively better huts. In Punchavayal and Alathur we came across a concentration of such huts with mud walls and bamboo and wood framed grass roofs. These huts cost more than Rs. 1,000, and some of them are as old as 60 years. Among the five tribes we met at South Wynad, the huts of Paniyan, Oraly and Naikan were very small in size and poor in quality. In most cases, their huts were not at all maintained properly.

From the above study we arrive at the following conclusions. The tribals in Kerala are socially, educationally and economically backward people. Since they are illiterate people, neither the parents nor the students are interested in education, though educational concessions are offered to them. Of the five categories of tribes we came across, the Kurumans were found to be socially and economically better compared to other tribes. The present employment opportunities available for the tribals in South Wynad area were largely due to the implementation of a number of tribal development schemes by the Government. As a result, the tribal people are getting employment and earning their livelihood. □

Need for Village Workers Body

B. Bhagavati

Mass poverty, unemployment, disparity and imbalance in our country have been on the increase. Over 47 per cent and 40 per cent live below the poverty line in rural and urban areas, respectively.

In about ten years more than five crore people have been added to the number of those living in abject poverty, consuming less than 2,400 calories a day in rural areas and 2,600 calories in urban places. The employment exchanges are swelling with the number of jobseekers, who stood at about 1.41 crore in September 1979.

The assets of the top 20 large industrial houses increased by 75 per cent from 1972 to 1977, thus further widening the imbalance and disparity in the industrial sector. What is the result? Inflation, high prices. Is there no way out? Are we to languish under the sinking economy? Where did we go wrong?

The author exhorts the poor, the exploited and the working class not to get confused and side-tracked from the basic issues, but to awaken, arise and form an organised body to launch a constructive programme with the object of establishing socialism in the country.

NOTHING can be more perplexing than the question why it has not been possible so far to solve the problems of mass poverty, unemployment, disparity and imbalance in the country. India has produced great religious and political leaders, intellectual giants, economists, scientists and experts of international repute in different fields along with vast number of hardworking and intelligent farmers and workers. There is also abundance of natural resources. Great progress has been made in the field of education, science, technology, industrialisation and agriculture. We may be legitimately proud of some of our achievements after independence. But the paradox is that a vast majority of the people have remained deprived of the benefits of progress and development. The grim fact is that the problems of hunger, privation and inequality seem to have eluded solution. What is more tragic is that the dimensions of these problems have not decreased, but have been increasing.

The Planning Commission's latest estimate of the number of people living below poverty line should be a cause for universal concern. It shows that the economic conditions of the country are not only far from encouraging but also have deteriorated over the past few years. The Yojana Bhavan has calculated that the number of people living below poverty line in rural and urban areas comprise 47.65 per cent and 40.70 per cent respectively of the total population. The estimate is based on the norm of per capita monthly consumption expenditure of Rs. 61.80 and Rs. 71.30 for the two groups at 1976-77 prices.

In 1967-68, about 40 per cent of the rural population and about 50 per cent of those living in the urban sector were included in the extremely poor group. In ten years, more than 5 crore people have been added to the number of those living in abject poverty, consuming less than 2,400 calories a day in villages and 2,600 calories in cities and towns.

Huge number of job seekers

Unemployment and under-employment have assumed collosal proportion. The number of job-seekers, as recorded in the employment exchanges, were about 1.41 crore in September 1979. But this does not give the real picture. Apart from those who have enrolled in the employment exchanges, we have to reckon the fact that the agricultural workers, whose number is about 6 crore at present, the small and marginal farmers who constitute about 75 per cent of the farmers, the village artisans and the landless peasants, remain unemployed for more than six months in almost all parts of the country. This is a huge number. As a matter of fact, all of them who live below poverty line should be considered as either unemployed or underemployed. It is an undeniable fact that those who flood the labour market do not have any scope for employment, as job opportunities are very limited. Total employment in the organised private and public sector of two crore persons accounts for only a tenth of the country's labour force.

The public sector has been the main source of additional employment in recent years. There was an increase of 35 lakh in total employment in the public sector. In the private sector, there was a decline in 1973-74 in spite of inflation, which is considered to be favourable for employment. There has been considerable shrinkage in employment in the traditionally known employment-oriented industries, like tea, jute and textile. In the five-year period of the Plan up to 1983, it is estimated, another 2.95 crore households will join the labour force. Thus, the total number of jobs required to be created to provide near full employment comes to a little over 5 crore.

Growing Disparity

Another disturbing factor is the growing disparity among different classes of people, and concentration of economic power in the hands of a few. The Mahabanobi's Committee, set up in 1955, found that there was truth in the criticism about concentration of economic power. On the recommendation of the committee, the Government of India appointed the Monopolies Enquiry Commission to investigate the extent and effects of concentration of economic power in private hands and suggest legislative and other measures for controlling and preventing further growth of monopolies. The commission found that 46.9 per cent of the assets and 44.1 per cent of the paid-up capital of all the non-government non-banking companies in 1963-64 were controlled by 75 business houses in India. In pursuance of the recommendations of the commission, the Government introduced the Monopolies and Restrictive Trade Practices Bill in Parliament in 1967. The Monopolies and Restrictive Trade Practices Commission was set up after the bill was passed by Parliament in 1969.

B. Bhagavati is President, Indian National Rural Federation

Now the question is what is the result of all these measures to curb concentration of economic power. It can be better judged from the figures, released by the Department of Company Affairs in September 1979. It shows that the value of assets of the top 20 large industrial houses covered by the Monopolies and Restrictive Trade Practices Act increased by as much as 75 per cent between April 1972 and March 1977. The assets of the top 20 increased from Rs. 3,071.98 crore to Rs. 5,401.70 crore during the period. This gives some idea about growing imbalance and disparity in the industrial sector.

Feudal Grip

In the agricultural sector, the grip of feudalism has not yet been relaxed and disparity is glaring. According to the Reserve Bank of India, the concentration rate of assets (mainly agricultural land) the poorest 10 per cent of the rural households owned only 0.1 per cent and the richest 10 per cent owned more than half of the total assets in 1971-72 as well as 1961-62 Though zamindari has been abolished and laws have been passed to put a ceiling on land holdings, it is found that less than 5 per cent of the farmers operate upon 29 per cent of the cultivable land as against 75 per cent of the farmers operating upon 31 per cent According to the National Sample Survey (26th round, 1971-72) the area owned in holdings of 30 acres was 5.781 lakh acres. It is a simply arthmetic that allowing 15/20 acres of land per family allowed under the Land Ceiling Act, 2.151 crore acres of land should be available for distribution among the landless agricultural workers. But actually only 40.4 lakh acres were declared surplus; the area taken over by Government was 21 lakh acres and areas actually distributed was only 12.9 lakh acres. All this shows that the land reform had no visible impact in the distribution of rural property.

It can be seen from casual observation that even though the number of people with some more money might have gone up in recent years, the conditions of the enlarged class of the poor have further deteriorated. The gulf between the haves and the havenots has been widening. Islands of affluence have grown up in the midst of naked poverty and privation.

High Price Low Income

Inflation and high prices have hit the poor hardest. Due to inflation which was 17.1 per cent in 1979 and fall in rupee value (which is 28 paise in a rupee at present) the real income of the workers and small peasantry has gone down But the Consumer Price Index was 363 in September 1979 (base 1960=100). It has reached a very high peak The consumers in general, and the working class in particular, are very poorly paid and their real income has declined. In consequence, the poor have to suffer the most and their suffering has increased due to constant rise in prices. Studies have revealed that incidence of unemployment is also progressively higher in the group of families with lower income So, the growth due to the development programmes and also what may be called the momentum of capitalism which is still a force in the country, have benefitted only a section of people. The bulk of the people, the toiling masses, are groaning under the heavy burden of social and economic inequality, poverty, unemployment and high prices. This is an undeniable fact. All statistics go to prove it.

Now the only relevant question : why we have failed to solve these problems and what is the remedy? The main cause of the failure is that the political force which can combine all other forces for integrated and co-ordinated effort to tackle these problems is very much dissipated and national political will has not taken shape in an organised manner. During the struggle for freedom a national political force was generated in a concentrated and organised manner on the issue of independence of the country. After independence that sort of national political force has not emerged on a central issue. Today we have not taken measures to cure the disease. We have not even tried to make proper diagnosis. We have only tried some palatives. There is no doubt that if we want to cure the disease, we have to bring about socio-economic transformation. And socio-economic transformation is not possible, if the basic conflict that exists between the haves and havenots in the prevailing system is not recognised and resolved.

Much can be said and has been said about eradication of poverty and welfare of the poor. But it has to be admitted that nothing really good can be done for them and their conditions cannot be basically changed, if a few are allowed to monopolise the means of production, either in the industrial or agricultural sector, and the vast number of real tillers or workers are deprived of it. Redistribution of national assets and resources on an equitable basis is a pre-condition for building up a society in which there is equal opportunity for all. This depends on structural changes. And it can be achieved through socialism alone. It is unfortunate that there is no such awareness and mass awakening.

In the press and on the platform, what we read and hear generally are opinions related to issues which may be important from a particular point of view, but cannot deal with the basic problems. For instance, it is really very important to isolate the caste and the communal forces. But it will not be wise to forget that the best way to fight the caste and communal forces is to lay stress on economic issues from the point of view of the toiling masses Once the peoples' mind is diverted to basic economic issues which are vital for them, all petty caste and communal politics and quarrels vanish, as darkness when the sun rises in the east.

Bold Decisions

As an economic truth, John Stuart Mill has said that "when the problem is huge, some little input will not yield some little result; it simply does not yield result at all". It should not be said that we cannot tackle the economic problems in a big way as we lack sufficient resources for the purpose. As U Thant, the former UN Secretary-General, has said, the greatest of all revolutions through which mankind is passing today is that resources depend on decision and not decision on resources. Today, if we really want to undertake something in a big way, we can do it. Resources will be available if we take courage to make a bold decision. In our country, what is needed today is a broad perspective with a modern outlook, patriotic urge and sense of duty to conceieve in a big way a programme of action to ensure modern standard of living for all, including those who are in the lowest strata. With that end in view, the principle of right to work has to be ensured in actual life Everyone must have equal opportunity, so that democracy can be meaningful to him. The national plan to produce enough goods and food for all the people should be executed with efficiency and honesty. Every

citizen should feel the responsibility to do his or her part.

Increased productivity

As a pre-condition to create enthusiasm and urge the people to increase production and productivity, the system should be so changed as to ensure that the producers get full benefit of the labour they put in and increase in production. What happens at present is a positive disincentive for increasing production. It will be seen from the fact that when the sugarcane growers increased their production in the last few years, but could not get even the minimum price, a Central minister came out with a statement that if the sugarcane farmers had not got proper price for their sugarcane, they could not blame anyone else, but themselves, as they had produced more than enough. Can anybody say that we have enough sugar in this country, if all the children, not to speak of all the people, have to take sugar of minimum quantity? Yet, a minister said that the farmers were at fault as they produced more than enough

A similar situation arose when the farmers increased production of potatoes, cotton and jute. The actual growers have not got reasonable prices for their products. In 1979, jute production was expected to be 65 lakh bales As the mills have to carry over surplus of 23 lakh bales of jute, the market forces may so manipulate that the growers may be at the mercy of the millowners and reasonable price may be denied to them. Much cannot be expected from the Jute Corporation, as at no time since 1971-72, has it procured more than 10 per cent of the season's crop

Minimum Wage

We can all be legitimately proud to know that we have now a stock of two crore tonnes of foodgrains. But have we considered the lot of those agricultural workers and small farmers who have made the main contribution with their back-breaking labour to produce enough to build up this stock? The minimum rate of wages, fixed under the Minimum Wages Act, for the agricultural workers is still far below than what can be said to be fair minimum. (The farm wages were recently revised 15 per cent upwards—Editor). By increasing production and productivity, they cannot now expect to get any reward. Even the minimum wages, fixed under the law, are not paid to them in most of the cases. The Government fix the minimum wages for the agricultural workers, but do not create any machinery with proper legal authority to settle the disputes for non-payment of wages in full and punish the defaulter.

The number of employers and landlords who engage agricultural workers is very large. Many of them are politically important in the locality. They can exert influence on their party or the Government. In a subtle way, they carry on propaganda that in the agricultural sector many employers are also poor and they cannot afford to pay the minimum wages to their workers The landlords plead in the name of the small farmers, as we find that big industries always oppose wage rise on the plea that smaller units in the industry cannot bear the burden This is a usual way of the rich to speak in the name of the not-so-richer section to exploit the poor.

The agricultural workers are not yet well organised. They are poor and illiterate. So their voice is not heard. There should be stringent law to punish those employers who do not pay even the minimum wages to the agricultural workers. As the agricultural workers are poor and still unorganised, the Government should not remain neutral. They have to take a definite stand in the favour of the weak and downtrodden and come to their rescue. It is necessary to create machinery to inquire from time to time whether full wages have been paid and take appropriate action, if payment has not been made according to law.

Basic Change in Attitude

It is high time that the political parties and the Governments pursue a positive line to resolve the conflict that exists between the haves and havenots. If they really want to do social and economic justice to the poor, they have to support the cause of the poor as against the vested interests. The present attitude of compromising with the existing situation, so that all classes, rich and poor, can be told, whenever the occasion arises, that the political party or the Government are there to preserve the interest of all sections. Such an attitude serves the rich only, and in spite of profound promises, the poor continue to remain deprived to get their due share of even what they produce and earn The main task today is to bring about a basic change in the attitude and approach of those who are in power or want to be in power. But it will not come merely by wishful thinking or some slogan-mongering

This task can be fulfilled by creating consciousness amongs the toiling masses, the exploited and the down-trodden. Social education on the right lines, conducted by a batch of enlightened and dedicated people, is necessary for this purpose. The traditional fragmentation of Indian people into many castes, sub-castes, and communities, and differences, created by such feelings, still exist and erupts in one form or the other. Two reasons can be ascribed for this. First, there has been no serious effort to come to terms with modernisation with science and technology; second, politicians try to exploit it for their own purpose The only way to come out of the present morass is to divert the attention of the people to vital economic issues and educate them in socialism Socialism should be made one and the only issue

Decent Living Standard

To assure a decent standard of living to each one in the country, it will be necessary to put before the people not only economic programme of socialism but also carry to them the message of science and technology. Indeed, the rural areas must have the benefit of science and technology. As we have a big surplus labour, some people think that the pragmatic or practical approach is to provide them at least with some employment, though the income, derived thereby, may be very small It is true that there are millions who have no employment and no income. But that does not justify that we plan for perpetuating poverty.

Some of those countries, which are prosperous and have labour shortgae today, had the problem of surplus labour and unemployment some years before. Today they can afford to pay high wages to their workers What they could achieve can be achieved by us, if we apply science and technology judiciously in the interest of the common man. In our conditions, labour intensive technique may be necessary. But we have to examine its implications very carefully and scientifically. The question is whether the labour intensive technique which generally means the

old technique can give reasonable income to the workers. Secondly, whether it really can create more employment or not ?

New Tools of Productions

We have not to accept but we have to examine the following figures without prejudice In 1970, against 92 agricultural workers per 100 hectares in India, Japan employed 192, South Korea 261, Indonesia 224 and South Vietnam 242. And yet the annual output per worker in Japan was $ 397, compared to $ 150 in India. Labour intensive technique should not mean that we have to use outdated, back-breaking tools with which productivity, or for that reason income. cannot be increased. It is for our scientists, technical experts and researchers to invent new tools and machines which can be used in small units by the actual workers or producers, and which will not be inferior to the most sophisticated technology in efficiency. This is the first condition to make the Gandhian economy and method of production successful in the modern world.

Gandhism envisages a new civilisation and a higher culture. But the birth of a new civilisation and culture depends on a revolutionary change in methods and tools for production. Gandhism as a socio-economic concept and a new civilisation will succeed if the technological device for decentralisation is solved. It is not something impossible to achieve. The last words in the world of inventions have not certainly been said. Let us hope that Indian scientific and engineering genius will make it possible to invent new tools and methods of production. which will bring about a new mechanical revolution

Several studies have proved that the technique of green revolution can be applied more profitably in smaller agricultural farms. What is true in agriculture can be true in industry also. Basically, it is to be admitted that we cannot remove poverty and the problem of low productivity and income without having recourse to modern science and technology. It has to be remembered that in ultimate analysis, modern development and economic progress in the world is mainly due to science and technology.

Constructive Force

Now, the poor, the downtrodden, the exploited and the working classes, both in the industrial and agricultural sectors, should awaken and arise and see that the confusion, deliberately created to side-track and sabotage the main basic issues by raising non-issues, can no longer deceive them. It is obvious that individually they may be poor and weak, but if they are organised they can be the biggest constructive force to rebuild the country where everybody will have equal opportunity and status. The challenge of poverty, hunger, unemployment, ignorance and disease can be met only by those people who suffer from all these disabilities, provided of course they are organised.

If their organised might is used in a constructive manner, with the objective of establishing socialism in the country, it is not that each one of the poor will be individually benefitted. The people as a whole will have the satisfaction that the great problems which were eluding solutions so far are being solved and the country is emerging very strong economically and politically. A mass organisation like this of the toiling masses and for the toiling masses who are the real producers and creaters, can certainly deliver goods, if its members live up to an ideology, maintain high moral standard in personal and public life and are prepared to make sacrifices for the cause and objective which they have before them. □

Entrepreneurship Development Among Ranchi Tribals

(contd from page 9)

and so on These institutions have started taking a keen interest in the tribal entrepreneurhip development in order to give a new direction to their social responsibilities. In July 1979, the BSFC sponsored an entrepreneurship development course at the XISS, and it came out to be a very successful course. In order to help the entrepreneurs trained by the XISS, the BSFC has formulated a special scheme of financing the tribal entrepreneurs on soft terms. The Industrial Development Bank of India has been approached by the BSFC in channelising the technical development fund through the BSFC for organising the EDP courses in the tribal villages of Ranchi district.

Year	No. passed	No. in business	% of success
1974 . . .	18	10	55.5
1975 . . .	—	—	—
1976 . . .	22	14	63.6
1977 . . .	36	20	55.5
1978 . . .	21	9	42.8
1979 . . .	26	14	53 8
	123	67	54 47

The work done by the voluntary organisations towards the entrepreneurship development among the tribals of Ranchi district is indeed commendable. Due to the absence of correct parameter and also magnitude of the task, the attempt to stastically measure the success of these socio-economic efforts, will not be a fruitful task. Much remains to be done, and the voluntary organisations, governmental agencies and financial institutions have to cover a good ground in achieving their objective. The planners at the State and national level will do well to draw up a comprehensive plan (not time bound), for the socio-economic development of each tribal group, and to provide a framework to and governmental agencies.

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Social Research

Research Methodology in Social Sciences: Edited by Prof. B. C. Tondon, Chaitanya, University Road, Allahabad, 1979, Rs. 40.

Contemporary research in social sciences, which regard man as a social member of the group and deal with his individual behaviour and the causes of changes in them as parts of their various associations, does not suit for its quality for policy-use to be relevant to the Indian situation. Research cannot be carried out in any one discipline in isolation, and has to be value-oriented.

A researcher, in order to obtain useful and sound results, in addition to acquiring adequate knowledge of sophisticated statistical tools, has to study associated problems of many allied disciplines. For research in social sciences micro as well as macro approaches become necessary.

The book contains 17 chapters, dealing with the vast subject of research methodology in social sciences from selection and formulation of a research problem to research designs, technique of data collection, scaling methods, MTMM Matrix and Multiple Regression Technique. The chapter 'Research in Soft Sciences' rightly insists that greater emphasis should be laid upon research in inter-disciplinary perspective with a macrocosmic approach and culturally appropriate models, tools, and techniques.

The book has been written by specialists in their own fields, but a few of them have made their articles so technical that a fresh researcher does not benefit much from them. Chapters on scaling methods, linear programming technique, and multiple regression technique belong to this class Prof. Tandon's observation, that the problems of research should be narrowly limited and related to the full-fledged knowledge of science, to be of use to the society, is quite sound. He holds the experimental designs to be most effective in cause and effect relationship and cites its advantages and disadvantages.

That accuracy and objectivity of investigation is very essential to draw sound inferences, is very correctly stressed by Shri Q H. Farooque in his article 'Interpretations of Findings' A Researcher must draw his own conclusions from diverse sources like folklore, art stories, and study changes in environments brought about by groups of men, over a period of time, as suggested by Prof. Durga Nand Sinha in 'Psychologists' Role in Social Research".

The essay 'Accounting for Social Good' by Prof. S. K. R. Bhandari highlights the necessity of developing sound accounting system in view of our society's increasing interest in non-profit-making organisations and discusses methods of research in this connection to raise the tone of managerial efficiency. "No research in India can be meaningful or justified unless there is a basic value consensus on the goals that are to be achieved", is a warning by Prof. A. D. Pant which no research methodology can afford to ignore.

As the book contains the experience and knowledge of experts on different aspects of social sciences, it would be of immense value to researchers.

Dr. B. S. Jain

Economic Theory

The Two-Sector General Theory Model : By Santi K. Chakraborti, The MacMillan Company of India Ltd., Madras, Rs. 40.

Kenynes' Works do not contain neat explicit model. Economists after him, however, have built models out of his works. The present book is just one more such attempt in respect of the 'General Theory' of-Keyns.

Economists, including Tobin and Modigliani, have demonstrated that the 'General Theory' contains a 'One-good Model'. The present book establishes that such a view is patently un-Keynesian, for such a model the 'consumption function' and the multiplier' have no role in determining the level of income and employment which pushes us to a situation that is against the central message of the 'General Theory.' It is argued that the 'General Theory' contains a 'Two-sector (Two-Good) Model.'

A 'Two-Sector (Two-Good) Model' of the 'General Theory' is built and its solution attempted whereby, a succession of functions and simplified models are generated. That the 'General Theory' has a 'dis-aggregative structure' is then demonstrated.

The author disagrees with many well-known views about certain other details of 'General Theory.' For example, he disagrees with Hicks that the prices in the 'General Theory' are of the 'fix price' variety, and that Keynes had a 'Wage-Theorem.' He argues that Clowers' model, having disregarded 'money', cannot represent Keynes world adequately. Keynes recognized the importance of 'uncertainty' to explain the development of unemployment, but, it is maintained, he did not see it as a general information failure affecting the spot markets. The distinction betwten investment and consumption is important in the 'General Theory' but that Keynes put bonds and physical capital in 'the same aggregation box', as held by Leijonhufvud, is incorrect.

There is nothing new in the book : the 'Two-Good Model' of the 'General Theory' was identified by Hicks and Meade much earlier ; and the disaggregative structure of the 'General Theory' was examined by Leijonhufvud before. The author admits all this.

What is novel is the presentation of the matter in the book; it is elegant, particularly the derivation of the marginal efficiency of capital schedule and the process of price determination in the 'General Theory'. The arguments against the 'one-Good' view and the aggregative structure of the Keynesian analysis is well set out. Rebuttal of some of Froyen's arguments, merely catalogued on Pages 31 and 32, would have bettered the analysis. The author does well to point out the significance of the 'Wage-Unit' in the measurement and analysis of macro aggregates in the 'General Theory'. The section on 'non-reaction' of Keynes to the misrepresertation of his model makes an interesting reading.

The little book succeeds largely in achieving its aim: neatly presenting the formal structure of a very major landmask in the evolution of modern Macro-Economic Theory : Keynes' 'The General Theory of Employment, Interest and Money' an otherwise complicated book.

Amitava Mukharjee

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Fantasy in Fabrics

Shakuntala Mahawal

Over the centuries, handicrafts have been passed on from generation to generation, and in the process many artistic and imaginative innovations to their intrinsic beauty have been added. Handloom fabrics have become more popular for their individualistic style and designs, and are specialised by families. They vary from one region to another and the riot of colour and motifs are today gaining markets both in the country and abroad.

IN this age of speed, tension, bustle and activity anything that attempts to bring nature nearer to us is at once in great demand. Take for instance, the handloom fabrics of Rajasthan, which, while capturing nature's grandeur, are proving so fascinating even to the foreigners that sometimes their demand far exceed supplies or availability.

On the legendary land of Rajasthan modernity bows before tradition and tradition respects modernity. Hence they go along the path of progress harmoniously, each complimenting the other. Nature has given it the sprawling Thar desert with its shifting sand dunes and scorching sun. Here, the ever-trying, testing nature may appear to be unkind but man has not only withstood this test but also brought out the best in human nature for the world in the form of folk art and craft.

Situated deep in the Thar desert is Barmer. The dextrous hands of Barmer maidens, with their nimble fingers, weave one of the most fascinating clothes that go by the name o 'armer Print'. These damsels of the desert [illegible] ost melodious folk songs of Rajasthan, [illegible] they spin and weave colourful patterns which reflect a touch of tenderness and an unparalleled grace and grandeur in the designs

So beautifully woven, dyed and printed is the Barmer Print that it has created a craze for itself across the globe, especially in Europe and America. If the flowers and butterflies are nature's gift to man, the Barmer Print is a speculam of the beauty and grace of nature and always 'says it with flowers'. Enchanting does not sufficiently explain the blend and range of colours that the Barmer Print is.

Competing with the maidens of Barmer are the beauties of Bagru, Sanganer and Amer, nearer New Delhi and adjacent to the Pink city of Jaipur. What the maidens of Bagru, Sanganer and Amer spin and weave, dye and print is no less a gift to the computer-[illegible]nted humanity than the Barmer Print.

[illegible] handloom cloth of Rajasthan is an excellent [illegible]terial, both for casual wear and for special [illegible]. From bedroom to saloon, this cloth provides [illegible] interior decoration material. For, these prints [illegible] offer wide scope for creativity.

[illegible]sthan has exported handloom fabrics worth [illegible] than Rs. 15 crore during the year 1978-79. This was next only to the export of gems and jewels from the State. To meet this growing demand of handloom fabrics of Rajasthan, the All India Handloom Board has a number of projects under implementation in the State. Under the Intensive Handloom Development Project of over Rs. 3 crore in the State, the Board has a plan to install 9.000 looms by the end of 1980. These will be in addition to the looms to be brought into the cooperative fold.

Already 6,000 looms have been set up in the State. With these projects in progress, the Board is trying to give a new lease of life to about two lakh Bunkars, the traditional weavers of Rajasthan. The weavers who have come under the wings of the board are now free from the clutches of the middlemen who used to exploit them by charging high price for the yarn and taking the woven cloth at very low rates.

The establishment of collection and sales depots by the Rajasthan Handloom Project Board at village level has proved to be a great boon to these Bunkars. The board has been able to establish 20 depots in 11 such districts, which are having concentration of Bunkar population. These depots ensure supply of yarn on a regular basis and at reasonable prices, arrange credits through the nationalised banks on differential rate of interest and take the responsibility of buying the woven cloth.

If one happens to talk to Mangli of Purana Amer village near Jaipur, she would happily narrate the story of the installation of a loom in her house at the instance of the Board and with the financial aid of the State Bank of Bikaner and Jaipur. Ever since the loom came to her house on easy instalments of Rs. 20 per month, she tells, by gone are the days of misery and hardship. Her husband goes to Jaipur to supplement their earnings and she, while sitting at home, is adding Rs. 250 to Rs. 300 per month to the family income.

With her face beaming with joy and self-confidence, she says that now not only their daily bread is assured but they are planning for a better tomorrow. In Amer Block itself the board has so far set up about 60 looms, on which about 12,000 metres of cloth has been woven and sent for sale in the last six months.

It may be true that man cannot compete with machines, but the artisans, with the rich hereditary legacy, can create fantasy. Yes, that's the word for Rajasthan handloom fabrics : Fantasy in Fabrics.

S. Mahawal is Information Officer, PIB Jaipur.

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yojana

Step by step

Wealth of Arunachal Pradesh

A NUMBER of oil and gas seepages have been discovered in Arunachal Pradesh. The seepages had been reported in the Namchi area and off Tissa Sream in south of Kanubari. Oil bearing beds in the Pasighat area of Sian district were also discovered.

Oil bearing sandstones have been found in the Miao-Vijayanagar road section and other nearby places.

Oil India Ltd. has recently struck oil in the Kharsang area and preliminary investigations showed that the Mana-Bum ranges in the miand region held vast oil reserves.

Though no concerete information on the occurences of gold in Arunachal was immediately available, some old records indicated gold panning in the sands of the Buridihing river. The GSI was conducting an extensive survey to discover gold in the Union Territory. Also investigations are in progress in different areas of the Territory to find new mineral metal and gas reserves by deploying trained personnel and sophisticated equipment.

Deposits of marble had already been identified in the Dapu, Lipushi and Mechuka areas in the Upper Slyom valley and a few occurences of high silica and magnesia, and marble (crystalline limestone) deposits had been reported from Lohit district.

The Tezu river deposit with an estimated reserve of 30.3 million tonnes upto a depth of 50m and the Dore rivers deposit with a reserve of 43.3 million tonnes upto a depth of 50m, were suitable for lime burning and use as building stone.

White coarse-grained marble deposit had been identified in the Dirang area near the Bomdila-Tawang road.

Coal bearing zones were located in Namchik-Namphuk and Miao-Bum areas. The Namchik-Namphuk coal fields had an estimated reserve of about 14 million tonnes while the Miao-Bum coal fields had a reserve of an estimated six million tonnes.

Significant deposits of high grade dolomite were recorded in Mameng and Subensiri districts. Dolomite generally conformed to the specification of refractory and could easily be utilised in the steel industry. GSI had found about 15 sulphide occurences containing pyrite, pyrrhotite, and chalcopyrite.

About six limestone deposits had been found in Lohit and Siang districts and the best among them was in the Tiding valley which would be used for cement manufacture. A reserve of about 200 million tonnes was estimated from the deposit.

There were about seven occurrences of flanky and amorphous graphite in Subansiri, Kameng and Lohit districts. Graphite could be utilised for manufacturing crucibles pencils and paints.

ISI Training Programmes

INDIA HAS trained 127 persons from 35 developing countries at the Indian Standards Institution (ISI).

The ISI has organised 12 training programmes to cater to the needs of achieving national and company standardisation activities in the developing countries.

Relief To Housewives

WOMEN in India will have a sigh of relief from the kitchen work with the introduction of microwave cooking oven in the near future.

Developed by the Electronic Corporation, a Government of India Undertaking, the indigenous design will help women save not only a lot of time but also coal, firewood, kerosene and liquified petroleum gas. The new oven will have the benefits of speed and simplicity of operation, besides preservation of nutiritive values of cooked food.

The oven needs power only to generate the heat. There will be no waste of energy. A timer controls all operations. Through microwaves, the energy penetrates directly in the food-stuff and food is cooked in a fraction of the time required by the other methods.

With this, the cooking will also be possible on paper, plastic, glass, chinaclay and ceramices utencils as these are transparent to microwave energy. This will also help reducing dish washing time since the food cooked does not stick to the materials used.

New Aid to Abortion

CENTRAL Drug Research Institute has developed cervical dilator (Isaptent). This device is used as an aid for termination of pregnancy and gynaecological operations. It is estimated that during the last one year more than 4 lakh operations were carried out in the country (as per the figures obtained from the U.P. Medical Health Directorate and Ministry of Family Welfare, Govt. of India). Hence, a minimum of four lakh cervicial dilators are likely to be required every year in our country.

Isaptent is a substitute for an imported item by the name Laminaria tent. This item is not being manufactured anywhere in the country. Estimated future demand of this item is at least 5 lakh cervical dilators per year.

Isapgol (Plantago ovata) seed husk is granulated, compressed into cores of approapriate size and these cores are encapsulated in a cloth tube either lined inside with a desired paper or coated with a thin film of microcrystalline cellulose followed by compressing the tube and packing in a glass or polythene tube and sterilization.

The CDRI, Lucknow has made more than 3,000 pieces of Isaptent and supplied to different clinical centres for clinical evaluation. Results of tests in more than 500 cases available so far showed that satisfactory degree of cervical dilation was achieved. Not a single failure was there. Psyllium seed husk has the property of swelling up at least 6 to 7 times the original bulk when it comes in contact with water. This property has been utilised for the preparation of the product. The gum present in the seed husk provides natural lubrication.

The main raw material is Isapgol seed husk. About 500 kg. of Isapgol seed husk will be required to make 5 lakh dilators. Apart from Isapgol, gum acacia, cellulose powder, fine cloth and cotton or polyester thread is also required.

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Effective Consumer Resistance

Z. R. Ansari

CONSUMER movement is essentially a product of industrialised society of the western world. The movement, nonetheless, is of equal interest to the developing countries, like ours. Consumerism, as is usually understood in the affluent societies in terms of subjects of interest and priorities, does not entirely apply to our situation.

In our context, consumerism should give the highest priority to ensuring availability of essential commodities at reasonable prices to the common man all over the country, including remote and inaccessible areas. Commodities in short supply should be equitably distributed without any undue price escalation and without playing with the quality of the products.

The main planks of consumer protection in our country can be grouped under legal measures, public distribution of essential commodities and people's resistance to unjustifiable price rise in essential commodities and co-operation with Government in taking action against hoarders, profiteers and other anti-social elements.

On the legislative side, a lot of work has been done, and, by and large, consumer protection measures in our country are fairly comparable with those in the industrialised countries

Public Distribution

Public distribution system is being further strengthened and enlarged to cover more essential commodities and more population, particularly those belonging to the economically weaker and vulnerable sections of the society. The scheme of public distribution is being linked with the production of various essential commodities

While efforts are afoot to increase the production of the consumer items of essential nature, imports of commodities in short supply are being arranged to meet the supply-demand gap

The consumer co-operatives provide an effective market intervention for protecting the interests of the consumers, and thereby represent an extension of the public distribution system Efforts are, therefore, being made towards expansion of the consumer co-operatives. The consumer organisations should take more interest in this area.

Voluntary Effort

The consumer movement, strictly speaking, is a voluntary effort. In our country the movement is relatively new. There are some voluntary consumer organisations in the country but only a few of them are active. The voluntary organisations are confined to the metropolitan towns The growth of the voluntary consumer organisations in the country during the past few years has by no means been impressive

Z. R. Ansari is the State Minister for Commerce and Civil Supplies, Government of India The text is the inaugural address read at the Consumers' Conference organised by the Indian Federation of Consumer Organisations at New Delhi.

Obviously, this underlines the need for spreading the movement throughout the country, particularly in smaller towns and rural areas.

Challenging Task

Some voluntary consumer organisations in the country have come together to form the Indian Federation of Consumer Organisations. As an apex organisation of the voluntary consumer societies at the national level, the federation has a challenging task before it. The tasks before the federation may be many. I would venture to make some suggestions in this regard.

I understand that the number of federating consumer organisations is quite small! This calls for ceaseless efforts to organise new consumer societies in the urban and rural areas The movement can take the shape of a mass movement only when there is mass participation in the consumer activities by a significant proportion of the consumers in the country.

A number of consumers' organisations are dormant. The federation should make efforts to revive these institutions and bring together all the consumer organisations, for genuine consumer protection activities, as member-units of one federation

Consumer Education

The consumer education should be given an overriding priority among all the programmes. which the consumer organisations might have before them. After all, an enlightened consumer is the best vanguard of his interest Dissemination of information relating to various legal protections available to the consumers, misleading advertising and labelling, common forms of adulteration and trade malpractices, judicious choice of the consumer products and services at competitive prices and authorities concerned with enforcing various legal measures relating to consumer protection is of paramount importance, where the federation and its members can render a useful service.

Lastly, the consumer resistance forms the core of the consumer movement Ralph Nadar was successful in his crusade to protect the consumer interests in the USA, because he was able to generate the consumer resistance. I have yet to see a consumer organisation in our country which has been able to build up the consumer resistance, opportunities for which are many, specially during the periods of shortages and spiralling prices

There are a number of consumer items in the market which are sub-standard in quality or hazardous to the human health. The consumer organisations can enlighten the consumers about them and lead them to boycott their purchases, demonstrate against anti-social elements and also help the Government booking them under the law. It is the consumer resistance alone which can discipline manufacturers and traders. The consumer resistance is an area which, to my mind, provides unlimited scope for the genuine consumer protection activities □

Crusade Against Consumer Exploitation

Kailash Rekhi

THE Indian Federation of Consumer Organisations (IFCO) is fundamentally concerned with the protection of the consumer interests, and the other objects are only ancillary to it. To protect the consumer interests, the problems of the consumers have first to be identified, before the national and the regional bodies can work out possible solutions. In each of the federating units, that is, consumer societies, the basic membership is at least 250. A strategy is now being worked out to involve more members, who are themselves consumers. Besides, it is to collect data on inflation, methods of adulteration of the consumer goods, as also the cases of lapses and contributory negligence in public services, like the telephone, electricity and transport, for which the citizens are made to pay. Under the programme, concrete cases of hardships and inconvenience will be compiled and brought to the notice of the authorities for remedial steps. This will be in addition to the existing work on hand of the Federation.

2,000 Complaints

More than 2,000 individual complaints have already been processed, with some positive results. The Federation has started a monthly bulletin to publicise the analysis of the data and information collected by our members as well as by other volunteers and field workers. It is proposed to enroll college and university students as volunteers and field workers. This will help create better awareness of the consumer problems among the general public and the concerned authorities. The bulletin will rouse the public to take active interest and to participate in the activities of the Federation and its units. The main object of the new strategy and the resultant activities would be to give the consumer organisations a mass base so that an effective public opinion could be created to get the consumer grievances and hardships redressed.

Kailesh Rekhi is Joint Secretary, IFCO, New Delhi.

Feedback From Feld Workers

A modus operandi, in consultation with the federating units, is being worked out. This is to receive feedback from the field work organised by the units throughout the country so that the Federation can formulate integrated programmes, policies and plans of action to fulfil its aim of protecting the consumers.

The Federation proposes to organise Mohalla and Basti vigilance committees of the consumers to take the movement to the grass-root level. Similar efforts

(*Contd. on page* 23)

Consolidating Consumersim in India

Navin Chandra Joshi

TODAY consumer resistance movement in India is in its infancy, indeed not-existent. The society as a whole has taken a woefully simplistic view of the very serious problems, like adulteration, price rise and shortages. If that were not the case, this country should have by now launched a nation-wide campaign against the anti-social elements who are sapping the vitals of the nation. The spirit of toleration has overtaken all manner of people, including the voluntary organisations, in applying consumer resistance to the nefarious activities on a war footing so that consumers, as a class, are not out-manoeuvred by the producers who have a big lobby and powerful organisations of their own.

The rule of the *caveat emptor* (let the buyer beware) prevails and negates all provisions relating to the consumer protection. It prevails because of the weak bargaining position of the consumers and lack of dynamic organisations to take up their cause. In fact, it prevails because of the apathetic attitude of the consumers themselves and the dilatory procedures in legal proceedings. In order to save himself from the subsequent harassment, the consumer would like to bear the agony of being cheated rather than be chivalrous in reporting the matter to courts, government or even voluntary organisations which themselves are ineffective. In a situation like this, the producer manipulates everything with impunity and the clutches of the law remain inoperative.

Navin Chandra Joshi is Lecturer, Motilal Nehru College, New Delhi.

No Longer the King

It is an irony that in a country where almost half of the total population is living below the poverty line, the consumer movement has not evolved itself in any definite functional shape. Needless to say, the producer is still having his heyday and the good old days when the consumer used to be the "king" are over, all manner of free competition notwithstanding. The market forces of free and keen competition have not benefitted the consumer who is always charged on the basis of what the "traffic can bear". The case of the consumer is going by default

In our planning process, viewpoints and desires of investors and producers are adequately taken care of but the consumer has absolutely no say, directly or indirectly. Surely, the fault is not of the planning process itself, nor of the Government. It is the people who are themselves to blame for this sorry state of affairs, as they have not organised themselves to build up a force to reckon with against the mighty

producers, whether they be in the private sector or the public sector.

No Dedicated Leaders

Our social workers have unfortunately turned into politicians, where they find a more fertile and promising area to tread. Their concern for the weak and for the cause they allegedly cherish is a mockery and a deceit for their eyes are always on contesting elections to assemblies and Parliament. Naturally, the amorphous class of the consumers do not get the really dedicated leaders who could take up the cause of consumerism with a missionary zeal as a social service. In number, the consumers far outweigh the producers of industrial goods and yet their voice is just not there in the matter of deciding what to produce, when to produce, what should be the price, and so on. What to say of the sovereignty of the consumer, he has now become the most passive partner in the consumption process.

Social Movement

By definition, consumerism is a process through which the consumers seek redress, restitution and remedy for their dissatisfaction and frustration with the help of their all organised or unorganised efforts and activities. It is, in fact, a social movement seeking to protect and augment the rights of the consumer in relation to the producer. The producer has the power to design the product, distribute, advertise and fix its price, but the consumer has only the power of buying or not buying it. While it is true that the producer runs the greater risk in spite of his several powers, the veto power remaining with the consumer is only a sham and exists only in theory. In practice, the consumer is not at all equipped to exercise that power for subserving his best interest. As a result, the concept of the consumerism did not develop in this country.

Consumerism can involve all kinds of goods and services bought by the consumer. In fact, the consumer should know his interest much more clearly when he buys something which has a high value in terms of price. For example, in buying a motor car, an insurance policy, a bank loan or a small flat, stakes are higher if mistakes are committed and their impact would survive longer. Therefore, the consumerism should function in all kinds of commodities and services, irrespective of their price. It is not necessary that it becomes significant only in the purchase of items of necessities, like soaps or vegetables.

Hitherto, consumerism has tended to centre around the branded consumer, products which cater to the urban population. In our rural areas, there is nothing like a consumer's choice and the customers are also not conscious of their rights, let alone applying them. It would be interesting to know that in the West, the consumerism has emerged as an outgrowth of economic affluence. There is no shortage of goods and services and the major objective of the consumerism there is to make the people better informed about the merits of competing products and services. It also represents the collective views of consumers for influencing the producers. Obviously, in India, the basic reasons for any kind of consumerism would be different. They could be spelt out as follows :

First, shortage of the essential consumer items as the basic needs of the vast population remain unfulfilled.

Second, price rocketing (inflation) from year to year with no pendency even to stabilise is a big prop for the consumer resistance movement.

Third, low technology and inferior ingredients give poor quality of products, which must be discarded.

Fourth, poor quality coupled with admixture has become a very common phenomenon in saleable goods, which are amenable to adulteration.

Fifth, poor knowledge on the part of consumers regarding the merits and demerits of competing products. This is due to the low level of advertising, as also manipulative advertising to dupe the gullible public.

Sixth, the menace of adulteration has assumed the dimensions of a mighty octopus whose deadly tentacles reach every consumer and almost every item of consumption. The consumers are therefore exposed to disability and death.

Seventh, the choice before the consumer today is between a substandard item and one that is known to be adulterated. The tedious, time-consuming and uncertain procedure involved in reporting such matters tends to discourage even dedicated social workers. The utter inadequacy of testing laboratories and the cumbersome processes of law are enough to deter most consumers from seeking a remedy.

Element of Protest

The aforesaid are some of the very sound reasons why India should build up a strong and permanent consumer resistance movement in order to safeguard the interests of the general public. To begin with, the major thrust of the movement should be on availability, purity and pricing of the essential commodities. Since the vast majority of the consumers has to keep a balance between income and expenditure, the need to protect the interests of the consumer has now assumed greater significance. Indeed, the consumerism in India should have an element of protest and militancy.

The Government has passed several laws to subserve the interests of the consumers but in practice they are either not implemented or the consumers themselves do not take recourse to them. Hence, consumerism has to be institutionalised so that a strong lobby is not only created but becomes very active in protest and highlighting the anti-social activities affecting the consumers.

Leon Hirshmann has said that if society will neither provide the consumer a choice—an exit from one product to another because the society does not permit or encourage competition—nor provide him a voice that is heard, the result will be a lack of loyalty. A dissatisfied consumer, according to him, will become a dissatisfied citizen with no loyalty to the state that denies him the elementary right of choice or voice.

Consummers Affairs' Cells

The Government should enact a law making it compulsory for all manufacturers, big and small, to establish a separate division for consumer affairs for participating in various decisions which have consumer implications. They could also be created industry-wise and location-wise. The manufacturers should also be told of the pros and cons of not responding to the calls of the consumer movement. A special levy should be imposed on companies for consolidat-

(Continued on page 21)

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Need for Consumer Associations

C. S. Rayudu

CONSUMER is the sovereign of the market. The final goal of all the business efforts is to sell goods for ultimate consumption. It is the consumer who need great attention from the business people. In a sales campaign, the primary task of a salesman is to identify and create a consumer for his product or service. They are the very source of sales. But the consumers are vulnerable and totally unorganised. There are many labour and employees' unions or associations with the specified objectives of protecting their members.

The conflict

The conflicts between the unions and employers arise because each set wants to protect its own interest. But much more serious conflict is between the manufacturer or trader who makes money and the consumers who actually pay for the item. If the business community forgets its social responsibility, then a day will come when the consumers will unite and revolt.

The consumers are facing many artificial problems like shortage of goods, hoarding, adulteration, profiteering, poor quality, high prices for substandard goods, defective weights and measures, and lack of credit facilities and competitive prices. The genuineness, purity and safety of products like drugs, cosmetics, edible oils, and other food substances should be checked and certified by the consumer associations. It is necessary for the consumers to involve themselves more actively in the matters of quality control of the products and to work in harmony with the authorities, with the ultimate aim of supplying healthy and hygienic foodstuffs and other consumer goods. In an economic democracy the businessmen cannot be dictators but should be the slaves of the consumers.

Consumers and the businessmen do not work in a vacuum. They cover the entire society with certain common social features and the business people form a social, economic and legal unit with multiple interests to subserve the consumers.

C. S. Rayudu is a lecturer at Madhu Malancha Degree College, Shakarnagar, Nizamabad District, Andhra Pradesh.

The consumer associations can be used, in socio-economic terms, as institutions which control the quality, price availability, weights and measures, safety and hygiene of the products. They have much social and political powers. Even though consumer associations are private organisations they are so closely associated with the public interest that there is increasing awareness for social accountability. The consumer association is a very powerful organisation which protect the consumers in general, and particularly the economically backward. To avoid economic abuses and offenses, the unilateral attitude of the business men should be made bilateral.

Many concerned laws, passed previously, were partially successful, because they often lag behind the reality. The Drugs Act, the Trade and Merchandise Marks Act, the Industrial Development and Regulations Act, the informal arrangements, several ordinances, monopoly laws, anti-trust law, preventive detention and so on, were worked out to protect the consumer remotely. The heavy demand for the scarce goods, which are hoarded and adulterated with a profit motive, gives birth to the consumer associations. The rapid growth of the market structure, and the complexity of modern life has created a gulf between the consumers and businessmen. With a view to bridge this gap, it is imperative to have recognised active consumer associations to protect the consumers. No doubt, it is a long felt need, but because of lack of efficient initiative, leadership and proper organisation, it has not been translated into action.

Economics of Justice

The Father of the Nation pleaded for moral standards in economics of justice in place of economics of profits. Economics that hurts the well-being of an individual or nation, is immoral and sinful. He emphasised that the economics which stands for social justice and protects all equally, including the weakest, is sound and good. The Directive Principles of our Constitution stipulate that the ownership and control of material resources of the community are so distributed as to subserve the common good and that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment.

Modern Consumer Cooperative Store in Tamil Nadu.

The objects of the consumer associations is to protect the consumer from all the evils and to ensure good quality and reasonable price. In a free and competitive market it is quite necessary to have consumer associations. They play a vital role in social development. Their functioning involves consolidating the results of the past experience, public understanding and acceptance. The associations establish the future progress in advance whenever there is a transition in habits, customs and tastes, depending upon the economic variations. It conserves the productive and manufacturing efforts by eliminating wastage, non-essential goods, and making mass consumption possible with income elasticities. It enables judicious and optimum utilisation of physical and human capital.

The consumer associations, on an organised basis, are absent in India, where illiteracy is high and businessmen are maximising profits by selling poor quality goods at high prices. These associations should be set up, in close liaison, gradually with all the producers of goods or services. The activities of the organisation comprises fixing standards and quality, providing timely information regarding changes and getting the acceptance. The setting up of fair price shops and co-operative societies over the years have made significant contribution to meet the needs of the vulnerable sections of the consumer in India. Also, to ensure proper distribution, to exercise direct control and to eliminate abnormal profits of the businessmen, it is necessary to have the consumer associations. They promote social consciousness and social control over the business activities and avoid heavy competition at the cost of the consumers.

To secure social justice and equity, the consumer associations are inevitable. In the advanced countries the consumers get their grievances, resulting from the producers' or traders' economic activities, redressed through the associations. In the socialsitic pattern of society, the maximisation of profits should be relegated to the backyard and the supply of quality goods and services at reasonable prices should be ensured. The consumers have the supreme power to counterbalance the role of traders or producers. They must make the businessmen recognise their power and right to negotiate on the quality and price ela ticities, which directly affect the consumers. Like the collective bargaining in the case of workers and staff, the consumers are also in a position to influence a number of economic decisions.

Consumer-Producer Dialogue

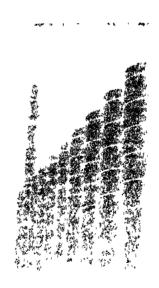
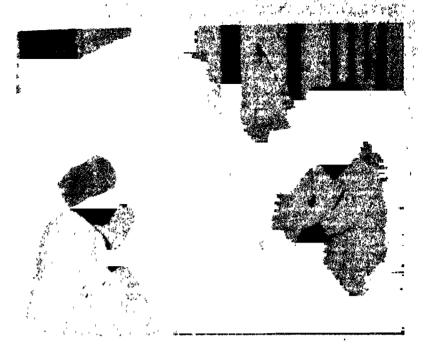
The producing and trading concerns have not made any significant contribution to the welfare of the society. The passive and inactive consumers have been simply exploited. The consumer has become totally dependent on the producer or trader, instead of the latter being dependent on the consumers. On the other hand, the producers and traders have associations to protect their own interests.

The producers' interests can be protected only when the consumers interact mutually with them. The former is trying to maximise the profits while the consumer wants to maximise his consumption satisfaction. It is a game being played by the two contesting parties for their private ends. In this game both should play an equal role without unbalanced pressure on either. In this connection, well-organised efforts of the consumer associations can influence in a desirable way. The serious defect of the "Laissez Faire" market system is the ever-widening gap between the producers and consumers. The consumer should not be under the impression that they simply have to pay the price arbitrarily prevailing, irrespective of the quality and nature of the goods. Local, regional and national level consumer associations should spring up to bring home to the producer the key position a consumer occupies in the market.

Representatives of the consumer associations should have an opportunity for joint consultations. The scope, extent and form of such a participation varies differently, depending on the class of goods and services produced in different sectors, private, public or co-operative. Such dialogues will promote the aspirations of consumers and inject new life into the structure of the market.

The consumer associations should act as vigilant forces against hoarding, artificial shortages, and adulteration. The consumers living close to the traders can act more powerfully than the remote legislative measures. The guilty should be declared anti-social and demonstrations should be organised as durable long-term measures. The consumer associations, with the assistance of the trade unions and other voluntary organisations, can identify the economic offenders, educate the public, and protect the consumer.

Drawing lessons from the past experience and from other countries, the formation of consumer associations at various levels is the need of the hour. The poor, the illiterate and the vulnerable sections of the society can be saved from exploitation through such organisations. The concept of a business activity has undergone vast changes and it is no longer directed to only swell the coffers of the trader. Now it has to look after the social welfare also. The interests of the trader and the consumer are interlinked and not conflicting. Consumers' participation means that consumers should not be exploited. The businessmen should act as trustees of the society for the common benefit. ☐

Silos on cooperative basis.

Cooperative Stores for Rural Consumers

R. B. Paul

NO SYSTEMATIC effort was made in the past for distribution of the consumer articles in the rural areas through the cooperatives. The consumer movement in India is mostly urban-oriented. The present policy and programme of the Government have been directed towards streamlining the distribution of essential consumer goods to the common man. It has also generally been recognised that to attain this objective the consumer store will have to play a pivotal role, both in urban and rural areas. The objectives will be to distribute essential goods of mass consumption in the rural areas and to exert influence in the market in maintaining the price line.

The present arrangement for the distribution of consumer goods in the urban areas is entrusted to urban consumer cooperatives, specially organised for the purpose. A controversy has been rising for the last few years over the suitable structural pattern for the urban consumer movement. But desired reorganisation in this respect is yet to materialise. It has generally been admitted that there is a need for reduction in the tier system, and wholesale and retailng functions should be segregated and entrusted to separate tiers. The lower tier should specialise in retailing.

The conference of the registrars of the cooperative societies and the State ministers of cooperation held in July 1974 recommended, amongst others, that the large network of marketing and service societies in the rural areas should be fully utilised for the distribution of essential commodities, and the State Governments should draw up a time-bound programme for its rapid implementation. The working group on cooperation recommended that during the Fifth Plan "efforts will be concentrated on increasing the coverage of rural areas, strengthening the marketing societies for increasing the consumer business and also encouraging a large number of agricultural service societies to open 'air price shops/retail shops for distribution of essential consumer goods." Budgetary provision for financial assistance and real endeavour to push forward the programe, except in a few States, have not been encouraging.

R. B. Paul is a faculty member at Cooperative Training College, Kalyani, Nadia, West Bengal.

NCDC Scheme

To encourage and assist rural consumer business on cooperative lines and to build up an effective channel of distribution under the existing structure, the National Cooperative Development Corporation (NCDC) introduced a scheme in January 1976. Under the scheme, financial assistance to the primary marketing societies or wholesale societies for undertaking the distribution of the consumer goods to their affiliated 20-25 agricultural credit societies has been provided. The scheme provides for financial assistance of Rs. 50,000 as margin money, Rs. 60,000 for purchase of vehicles and Rs. 50,000 for furnishing the retail outiet. The National Cooperative Policy Resolution also states, "the consumer cooperative movement shall be built up to strengthen the public distribution system and act as a bulwark of consumer protection and instrument of price stabilisation." The consumer cooperatives in the urban areas and primary agricultural cooperatives in the rural areas should undertake distribution of essential consumer articles of mass consumption and implement the new production-cum-distribution system to be started in all the States.

It is clear that the Government plans and programmes for the distribution of consumer goods in the rural areas are confined to centre round the existing large credit societies and primary marketing societies. Now it can be argued if the village credit societies will be suitable for consumer business. Is it going to be a permanent platform for consumer business in the rural areas, or an ad hoc measure?

The village credit societies are practically preoccupied with increasing diversified lending programme and recovery throughout the year. They are expected also to concentrate on the supply of other agricultural inputs. They are to divert and reorient their functional pattern to the needs of the weaker sections of the

population. Undertaking of retail business of consumer goods will hamper their normal function of supplying agricultural inputs, besides saddling them with other operational hazards. Mismanagement and losses in consumer business may have disastrous effect on the credit function. Let the village credit societies be engaged in fulfilling their main objectives.

Stature and Strength

Let not our expectation be too high of a structure which is yet to gain stature and strength. All over the country, the marketing societies are mostly engaged in non-marketing activities. Urgent endeavour and action plan are called for, to strengthen and develop the marketing societies to fulfil the major role expected of them. It is rather ironical that when these organisations have, in most cases, failed in marketing of agricultural inputs and outputs they are enstrusted with specialised consumer business demanding more managerial efficiency and business expertise.

The present arrangement is purely a stopgap one. We have to build up a strong and viable structure to deal in consumer goods in the rural areas. The consumer business to develop requires a good site, preferably in a market-place, with proper shop layout and design so that it can create an impact on the local areas. Along with modern decoration and outfit, we have to maintain regular supply of quality goods at reasonable prices. The business must be handled by properly trained and efficient employees. Necessary books and records must be maintained uptodate.

As the consumer business is based on the acid test of honesty and integrity, there must be regular supervision, inspection and control. Regular procurement and time-bound distribution to the village store are to be ensured at any cost to avoid stock-out. Determination of periodical operational research, its analysis and interpretation, willlingness and promptness to take action against any stock shortage or deficits are very vital for the successful functioning of the consumer business. There should be performance appraisal for each and every shop.

Basic problems

Can all these prerequisites be ensured under the present arrangement for the distribution of consumer goods ? No doubt, there will be liberal financial assistance from the Government and the NCDC and earnest endeavour to maintain the supply line through compulsion and persuasion, but the real success will be limited due to built-in problems. Lack of coordination and cooperation between the link agencies, communication gap, problems and difficulties in maintaining regular and timely flow of supplies, managerial problems over operational areas and absence of suitable trained cadres for the shops are some of the basic problems which will retard the progress of the scheme.

If we are to build up an efficient, workable and viable structure for the consumer business in rural areas, let our vision and approach be not clouded. Let us not be satisfied with the easy fulfilment of targets and readymade satistical information for the rapid progress and expansion of rural consumer business through cooperatives. This type of costly experiment will end with no real achievement.

In the midst of the accepted line of action there is a need for the development of rural consumer business on cooperative lines. Let the beginning be a very humble one. Each State should select two or three central wholesale consumer stores to start with. After conducting proper feasibility study and good deal of planning, each central store should open 20 to 25 viable or potentially viable branches in the rural areas. Opening of the branches should be guided more by business logic than any other consideration. The branches should be housed and located in local market centres to cater to the needs of the areas. As far as possible, shop layout and design should be uniform and attractive. The central wholesale store will recruit suitable personnel and train them for the job and form a cadre of personnel for the management of the shops.

Management

Management of the store should be professionalised. A dedicated central team with a band of dedicated workers can streamline the procurement and distribution to retail shops. The centralised direction and control, it is expected, will be more effective for the proper development of the shops. Centralised purchases can be streamlined so as to derive the maximum economy on purchases. Management action and control, as indicated earlier, for the success of the consumer stores should be rigidly and honestly followed. At no stage should these branches be opened and operated as "scarcity shops". They should be the outcome of the normal business activity.

The present policy and progamme of the Government have been directed towards streamlining the distribution of essential consumer goods to the common man.

We have to build up a strong and viable structure to deal in consumer goods in the rural areas. Alongwith modern decoration and outfit we have to maintain regular supply of quality goods at reasonable prices.

To safeguard the interests of the rural consumers is indeed a real challenge to the consumer cooperative movement. The movement should seize this great opportunity by organising viable consumer shops for the distribution of consumer goods in the rural areas. What is needed is a dynamic approach based on practical consideration. The present scheme of financial assistance for marketing societies by the NCDC may be shifted in favour of the central wholesale store and its branches. The Government may also draw up a special scheme for financial assistance to the central store and its branches. The consultancy service of the NCCF, should provide necessary technical guidance. All-out efforts are urgently called for to make the cooperative stores for rural consumers a success. □

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Consumer Movement at the Rural Level

Lawrence Richard

EXPLOITATION of the Indian consumer has continued for a long time now. He is regularly fleeced by hoarders who deliberately engineer conditions of scarcity in order to be able to raise the prices. He is given, for his money, adulterated foodstuffs which are very often dangerous to health. In the absence of an independent agency to verify the weight of the contents given on a package, he has to accept the supplier's or retailer's word for it. There are innumerable products in the market, whose contents are far less than what is printed on the carton.

The consumer can be protected only through a strong consumer movement. Unless the consumers unite, they will not get a square deal from the traders. But this is easier said than done. Uniting the vast illiterate masses is a difficult proposition, although not impossible. In the developed countries, the people are literate and consequently have more consumer awareness. It is, therefore, easy in the West for the consumers to assemble under a common banner.

Motivating the Consumer

It is just the opposite in the developing countries The organisations have to commence from motivating the consumer by awakening him from apathy and complacency. After motivating, he cannot be left alone lest he should slip back to the original state. The organisation has to keep his interest alive. The experience of the Price Rise Resistance Movement (PRRM) is before us. The PRRM came on the scene in 1962 with a bang, but now little is heard of it. Organising a consumer movement, in a land where the people generally believe in the motto "each one for himself and the devil take the hindmost", is a difficult task.

There are, no doubt, instances where women have taken a lead in curbing the price-rise. But these movements were started only to get a temporary relief and soon fizzled out after the aim was achieved. The Consumer Guidance Society of India, started in 1966, has a well-knit organisation with a fairly large membership. Unfortunately, its activities are concentrated only in a few urban areas. Lately, a few consumer organisations have sprung up, but like the Consumer Guidance Society, they suffer from the same malady of confining their activities to a few cities.

Until and unless the consumer organisations shed their fondness for metropolitan cities, they will not be able to achieve much. It is more in the rural, than the urban areas, where the need for the consumer movement is keenly felt. The ignorant village folks are easily duped by the colourful packets and designs. They have no information to compare the quality, efficiency, durability and dependability of the product they buy.

Awaken the Villagers

It is imperative for the consumer organisations to create awareness among the villagers. Social gatherings should be organised, to enlighten the masses regarding adulterations in the food-stuffs, underweighing and supply of imitated products. Installation of weighing scales in the local village market would serve as checks on unscrupulous traders. The village consumers are further handicapped owing to the dearth of variety in the articles of everyday consumption, such as tobacco products, laundary soaps, cooking oil and a wide range of domestic products.

If a Calcuttan finds one brand of soap harming his skin, he can easily switch over to the other, which costd the same. Or if one type of Vanaspati upsets the system of a Delhite, he has the option of substituting it. But even this simple means of self-protection by purchasing an alternative brand next time is denied to the villagers Also due to paucity of the products in the village, they have to stick to a particular brand, come what may. Here the Ralph Naders can be of immense assistance. They can approach the manufacturers and impress upon them the need for supplying their goods to the rural brothren. Or, if this is not possible, the consumer cooperatives can be organised so that the articles of daily need can be made available to the villagers at reasonable rates.

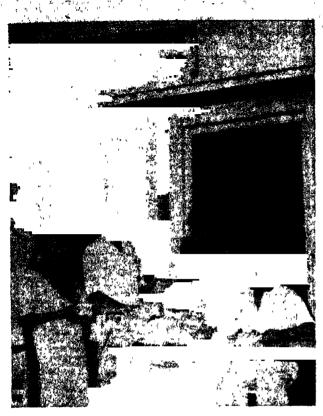
TV, Radio Consumer Programmes

Talking to manufactures and installing weighing machines is not enough. Adequate information about choices and the types of goods to be patronised should be provided to the village folks. The ISI mark is not understood by the rural people. Even among the urban consumers, only a small proportion have understood its significance. All India Radio, the powerful medium of publicity in India, can play an important role in the consumer's education. In Malaysia, the Phillipines, Hong Kong and Fiji, the radio is regularly used for consumer information programmes. There should be a regular consumer programme on AIR and Doordarshan, involving members of the consumer societies. Well-researched documentaries should be produced and shown in all our villages through publicity vans.

A strong consumer movement is the best safeguard, which the much-exploited and much-abused consumer can build to protect himself against the machinations of the traders indulging in sharp practices. If we want to achieve the goal of economic freedom, a strong consumer movement is the need of the hour ☐

Lawrence Richard is a student of journalism, Calcutta University.

New Public Distribution Policy

T. Umamaheswara Rao and
T. Rama Devi

INDIA is a vast country dominated by the agricultural sector. As such, the majority of the population lives in the rural areas and the markets in our country are therefore more rural and less urban. The rural consumers have a little purchasing power due to the low investment and meagre income generation system prevailing in the rural sector.

The realisation of this fact, of late, has led all the development agencies to concentrate on the problems of the rural people and find solutions to uplift them. In line with this, the need to gear up the distributive machinery, the powerful tool to establish an egalitarian society, is the need of the hour. A rural-based and rural-biased distribution network coupled with production system is the indispensable ingredient in the rural development programme.

At present, the normal trade channels, the cooperative societies and the public distribution system are the different agencies for distribution in our country. There are altogether 2.40 lakh distribution centres in our country. As many as 1.60 lakh centres are under the private sector. This made the consumer become a prey to the greediness of the intermediaries and evils like hoarding, adulteration, under-weighing, high pricing and other malpractices. To correct this situation, the Government has resorted to the expansion of the public distribution system.

Equitable Distribution

The objective of the public distribution system is the equitable distribution of essential commodities at fair prices to fulfil the time, place and functional utilities. Unlike other systems, it has the social objective of making the commercial activity a productive development activity. The earlier efforts of the Government in this direction have not yielded considerable results.

The National Development Council in its meeting held in March 1978 emphasised this fact. The council recognised that the public distribution system covering essential articles of mass consumption needed to be expanded and strengthened without any delay.

As a consequence, the Ministry of Commerce and Civil Supplies contemplated a new scheme, which envisaged a substantial step-up in the production of items by giving transport subsidy for essential items carried to distant places, a levy on producers of non-industrial items and a countrywide network of fair price shops. The salient features of the scheme are:

—Sustaining and increasing production of the essential commodities.

—Expansion of the area coverage, particularly to serve the rural poor more adequately.

—Expansion of the commodity coverage.

—Distribution system through economically viable units.

—Procurement and buffer stocking of the identified commodities by the public agencies.

—Subsidies, if any, to be confined to buffer stocking operations only .

—Establishment of vigilance committees with local public participation.

—Construction of high power committees at the centre and State levels for coordination and supervision of the distribution scheme.

—Effective information system by the State Governments to keep constant check on production and avaliability of essential commodities.

—Active participation of the State Governments.

With slight modifications made at the Chief Ministers Conference in the above-mentioned features, the new scheme came into effect from July, 1979. The scheme proposed a fair price shop for every 2,000 persons in the rural areas and setting up of the citizen's committees to ensure that the fair price shops mind their business with devotion and dedication.

Not a Viable Unit

Theoritically the distributive system of the Government sounds good, but practically speaking a fair price shop cannot be a viable unit, because there may not be enough turnover for it, as the purchasing capacity of the people in rural areas is low. In addition, the income of a majority of the rural population is not regular. Consequently, they may not purchase the essential commodities throughout the year. To overcome this, credit facility has to be extended but this too is not feasible. On the other hand, the marketing costs in the rural area are also more than that of servicing the urban markets.

The ultimate success of public distribution system lies on increasing the purchasing power of the poor, increasing the aggregate supply of essential commodities, and strictly checking the trade malpractices.

T Umamaheshwara Rao is Commerce Lecturer, Nagarjuna University, Nagarjuna Nagar.

Consumer Movement In India

Biswanath Ghosh

A CUSTOMER had gone to a shop to make an enquiry about a refrigerator that he had given three months ago for repair. When he was told that it was not yet ready, the man put his hands into his pockets, brought out a pistol and fired three shots at the refrigerator and left the shop in a huff.

This is not a concocted story but what actually happened in Delhi sometime ago. It indicates that the consumer is still helpless, has no forum to give vent to his grievances, and consumerism is yet to become a social force in India. We need a Ralph Nader to make consumerism a dynamic force in India.

In the *laissez faire* society, the consumer was a king and he was free to choose. But the consumer sovereignty is a myth and the supposed benefit to the consumer accruing from perfect competition has not been realised. The actual world is a world of imperfect or monopolistic competition and the consumer has only a limited amount of freedom in making purchase choices.

When the consumer will be able to assert himself, the 'take-it-or-leave-it' aspect of transactions in the Indian market will end. As the manufacturer has the free choice to produce and sell his goods so the consumer should have the choice to select from the range of products available. This is what is meant by consumer's sovereignty in the present socio-economic context.

Disorganised Consumers

Consumers as a class in our country are the only group of people so disorganised that they are being unconsciously exploited all the time by other sectors of the economy—industry, labour and agriculture. The weakness of the consumers is the main cause of exploitation. In a democratic country, the consumer should be protected from exploitation by the traders, industrialists and agriculturists.

In our country, problems do not arise from exaggerated advertising claims as in the U.S.A. or U.K., but from price rigging, adulteration of food and medicines and malpractices like hoarding, cornering and blackmarketing.

India is a poor country. A sizable section of the population live below the poverty line. The needs of these people should be provided at reasonable prices within their purchasing power, otherwise democracy would be an empty word, signifying nothing.

Pathetic Plight of the Poor

Inflation is the most important factor in accentuating the poverty problem in India. This has reduced the wage and salary incomes of the fixed income groups, including low paid government and non-government employees, unorganised workers and landless labourers. With rising prices of foodgrains, edible oils and other essential consumer goods and with money incomes remaining almost constant, inflation has caused anguish and hunger for the vast majority of the poor people in India.

The price level is on the increase. If the consumers wish to salvage themselves out of this, it is high time they organise themselves into a collective voice. A massive consumer movement on an all-India level is called for if the fruits of our national progress are to be enjoyed by all.

B. Ghosh is Lecturer in Commerce and Management, University of Burdwan.

The Calcutta Consumers' Action Forum's success some years ago in persuading makers of baby foods to utilise idle capacity—also in ensuring that wholesome fish is supplied to hospitals—clearly reveals what a pressure group can achieve if the public conscience is aroused and opinion mobilised.

We cannot rest content with Prof. Samuelson's dictum that the business of business is business. Business is not an island in itself. It is part and parcel of society as a whole. Hence, it should be constantly alive and alert to its responsibilities to the society. Consumer protection movement is an attempt to make the businessmen aware of their social responsibilities.

Fair Trade Practices

Sometimes ago a need was felt to have an institutional approach to the question of not only promoting fair trade practices but also educating the businessmen consumers and the public so that the black sheep among the businessmen do not bring a bad name to the entire community. Thus, the Fair Trade Practices Association was set up in 1966. But the Association could not achieve much success. It could neither curb unethical practices, nor enforce a code of conduct. So a strong institutional approach is called for.

The objective of the consumer movement is to save the consumer against all types of unfair trade practices. The incidence of adulteration is on the increase. Adulteration, beginning from the Second World War, has today become a big business itself. Twenty-five per cent of the foodstuffs sampled by the Calcutta Food Cell has been found to be adulterated, in almost all cases, cheaper materials are used which are very similar to the item in question and the dishonest trader hopes to make more money by deceiving the customer. In the case of mustard oil, it is always found to be adultered with cheaper edible oils. In 1974, there was one serious case in which machine oil was mixed with mustered oil, resulting in the death of one and the paralysis of many.

Toxic Food Colours

There are eight government approved food colours, but the traders use cheap and synthetic colours which sometimes prove to be detrimental to health. Bright colours are often used to attract the eye of the customers, as also to conceal the unhealthy product. These cheap colours can lead to cancer. The highest adulteration among the foodstuff is done in milk—nearly 100 per cent. Not only Indians do not take enough milk, but whatever milk they do take, is watered down. There is a common joke in West

Bengal as to whether water is mixed with milk or milk with water.

Tests have revealed that 32 per cent of loose spices and condiments sold in a particular area are adulterated and unfit for human consumption. While food and drink adulteration has become normal practice in our big cities, a recent test of 'surma', an eye cosmetic, has indicated the presence of one to five per cent of lead in the samples which can do irreparable damage to the eyes.

As for petrol, it is difficult to detect adulteration of petrol as long as the kerosene content does not exceed 10 per cent. Anticipating a further rise in petrol prices, some petrol dealers have resorted to this trick. The car drivers are complaining of constant trouble with their car engines because of "bad petrol".

Myth of Standardisation

The Government's Ag-mark standardisation yardstick seems to be proving a myth as has been exposed in 1974. Twenty-one samples of the Ag-mark sealed tins of oil and ghee were subjected to scrutiny. Of this, three from 17 oil tins were adulterated, one from three ghee tins and the only groundnut oil tin sample also proved to be adulterated. In this case, the local retailers were not held as the Food Cell suspected mischief at the sealing station.

The Indian Standards Institution has suggested that all items concerning public health and safety should compulsorily bear its certification mark and that erring parties should be awarded a fine of Rs 50,000 and/or a rigorous imprisonment upto one year.

At present, only 14 commodities are covered under compulsory ISI certification. The penalty for violation of this obligation is only a fine of Rs. 10,000 and no imprisonment.

The price stamping scheme for non-controlled varieties of cloth was introduced to enable the consumer to bargain for a relatively low retail price and thus force the trade to keep down its margin as far as possible. In practice, however, this has not happened in a large number of cases Most of the Ahmedabad mills are stated to be stamping prices 10 to 25 per cent higher than the sale price in order to ensure good demand from the wholesale trade.

Menace of Short Weight

Short weight and bad quality are serious consumer problems. In a seminar, organised by the Indian Standards Institution in Calcutta in 1978, it was revealed that the consumers in India are cheated to the extent of Rs. 1,000 crore every year by way of short weight and bad quality of products.

Businessmen and industrialists at least know that if they are good to the consumers, there will be no lack of demand for their products. Naturally, businessmen are eager to earn the goodwill of the consumers, for thereby they can increase profits in which they are interested.

Our experience with the Life Insurance Corporation or with the nationalised banks is rather pathetic. After nationalisation, the policy holders feel that there is nobody to look after their interests. Normally, if the policy holder writes a letter to the LIC management, he never gets a reply. The policy holder does not get the reminders for payment of premium in time. If he makes a personal visit at the office, he is sure to face a very hostile reaction. In the case of the nationalised banks services are equally unsatisfactory. A person with an account is treated as if he is a servant of the bankmen, forgetting that the bank is doing its business with people's money. Although banks are supposed to start at 10 a.m., most of the counters do not start work before 10.30 a.m.

Legislative Measures

Legislative measures are necessary to protect the consumer and give him the rightful place in a market economy. It is felt that the economic interests of the consumers have been safeguarded by the Essential Commodities Act, the Forward Contracts (Regulation) Act, the Trade and Merchandise (Marks) Act, the Standards of Weights and Measures Act and the MRTP Act and so on. But there is no separate legislation in the area of unfair trade practices. Enactment of a fair trade practices legislation will go a long way in safeguarding the interests of the consumers.

Strengthen Public Distribution

Besides, the main planks for protecting the consumers are public distribution and consumer co-operatives. Public distribution system started during the Second World War and in the case of the consumer goods, it is now in operation. It covers foodgrains, sugar, kerosene and controlled cloth. The Fifth Plan had proposed to expand the coverage to include pulses and edible oil. The objectives are to keep prices in check and to ensure equitable distribution of scarce but basic foods. The system also helps to check hoarding and blackmarketing. The public distribution system does not necessarily improve the distribution of income but it helps to prevent a deterioration in distribution in inflationary conditions. Shortages of essential goods as well as monetary inflation can be highly regressive if a public distribution system does not prevent serious cuts in the consumption of the poor.

Though prices of essential items, such as cereals, bought from the fair price shops have been lower than prices in the open market, quality-wise it has been the other way round. More significantly, the poor are often unable to buy their requirements from the fair price shops, because they do not have cash in hand. They usually go to the private traders who provide credit facility, even if it means actually paying a much higher price.

Since most of the unfair trade practices are due to shortage in supply, what is needed is a rapid increase in the production of all varieties of consumer goods and improve their quality. Distribution and prices would take care of themselves. ☐

A massive consumer movement on all India level is called for if the fruits of our national progress are to be enjoyed by all.

The objective of the consumer movement is to save the consumer against all types of unfair trade practices.

Beware of what you Eat

Food is divine. But only when it is pristine pure. Today, however, the common man's food, due to adulteration, contains 25 to 30 per cent poison, leading to instant or slow death through all sorts of diseases. When the unscrupulous trader palms off spurious staff very cleverly, the consumer should do everything possible to save his life and limb. Here are some tips :

Health Hazards of Adulteration

Adulterant	Food article	Effects on health
Argemone oil	Oils and fats	Epidemic dropsy, glaucoma, blin ness, cardiac arrest
Pesticide residue	All types of foods	Acute or chronic poisoning, with damage to nerves and vital organs
Mineral oil (used motor oil) . .	Oils and black pepper	Diarrhoea, vomiting, cancer
Methyl/alcohol	Alcoholic liquors	Blurred vision, blindness, death
Lead chromate	Turmeric and powdered mixed spices	Anaemia, abortion, paralysis, brain damage
Metanil yellow (coal-tar dye) .	Turmeric, mixed spices, saffron, dehusked pulses, rice (golden sela), yellow sweets, beverages	Tumours, cancer, testicular degeneration in males
Lead	Tap water, some processed foods	Lead poisoning, causing foot-drop, anaemia, mental retardation, brain damage
Kesari dal	Pulses and besan	Paralysis of legs

Detection of Adulteration

Food article	Admixture	Simple tests
Milk, curd, Bengal gram . . .	Starch	Add a drop of tincture iodine to a little sample Blue colour indicates starch.
Coffee powder . . .	Roasted date-stones, tamarind seeds	Shake powder with 1% washing soda solution. Red or pink colour shows admixture with datestones and tamarind seeds.
Tea	Coloured used tea, gram dal husk	Sprinkle the tea on a sheet of wet filter paper. Pink or red spots on the paper show added colour.
Cane sugar	White sand, suji, chalk, iron fillings	Stir one teaspoon of sugar into a glass of water. Only sugar will dissolve, leaving a residue of the spurious stuff.
Pulses	Kesari dal	Visual examination.
Pulses, sweets, ice-cream, sherbat, rice (golden sela), turmeric	Metanil yellow	Shake up with some warm water. Dilute a water sample if coloured, till it is almost colourless. Add a few drops of hydrochloric acid. Magenta colour will show the metanil yellow adulteration.

Inflation and Credit Curbs

E. P. Radhakrishnan

INFLATION is a normal economic phenomenon. In simple terms, it means expansion of money without corresponding expansion of goods. In other words, it means too much of money chasing too few goods. The prices shoot up and the people are left high and dry and caught up in a vicious circle, not knowing how to get over it.

It is difficult to find out how the money expansion takes place. Essentially, deficit financing by a government is one contributory cause. In India, the Government has been resorting to it mainly to balance the budget. As a result, there has been an unbalanced growth of the economy, despite the claims of planning for plenty.

Between 1961-62 and 1971-72, the deficit financing of the Government, both at the Centre and in the States, had amounted to over Rs. 3,000 crore. During the decade the national income, at constant prices, went up by 38.8 per cent; but the money supply rose to fantastic hights, by 167 per cent. There is cause for grave concern at the distorted growth of the money supply because it has boosted prices. The price rise had been at least 35 per cent. In consequence to the 1979 budget, the price rise has been over 25 per cent.

Black Money

Because of the high price rise, there has also been an attempt on the part of the manufacturers and traders to hoard goods and to make easy money. They avoid paying their due taxes and the growth of black money has assumed alarming proportions. On a rough estimate, the black money is said to be around Rs. 5,000 crore, enough to run a parallel economy. It is obvious that the tax collection and enforcement machinery is weak.

Another cause contributing to the growth of black money has been the high rate of taxation. In fact, India is said to have the highest rate of taxation. The maximum rate Income Tax was about 98 per cent a few years ago and during the last two years it has been brought down to 77 per cent. Even so, it is considered high in the context of a developing economy.

Prof. Nicholas Kaldor, the British taxation expert, in his report submitted to the Government some years ago, had suggested that the corporate tax in a developing country should not be more than 50 per cent, since anything above this rate would hinder production and capital formation and thus help push up prices. The Government did not accept his proposals, with the result India now has been caught on the horns of dilemma. It cannot go ahead with reducing taxes, nor can it plan well its programmes for increasing production.

Selective Imports

In a developing economy, deficit financing cannot be completely ruled out. To some extent, this would be necessary to keep up the tempo of economic development, but care should have been taken to limit deficit financing to the absolute minimum. But when the oil prices went up steeply and imports of capital goods and raw materials registered regular increase, the Government had no alternative but to indulge in large-scale deficit financing to meet its current obligations. Imports had to be enhanced to keep the production base expanding and to ensure that no factory closed down and there was no recession. But what had happened was indiscriminate import of a large number of items which India could have produced on its own. The Government could have been realistic and imaginative to give boost to the fullest utilisation of the indigenous capacity. It should have allowed only imports of sophisticated items of capital goods which the country could not have produced and which were needed badly to catch up with the modern technology. This would have helped to expand its production base for increasing exports.

In the name of liberalisation of imports for keeping the economy booming and to increase exports of the manufactured and semi-manufactured goods there were indiscriminate and even repetitive imports. We have, therefore, now been caught in the web of a galloping inflation.

Credit Curbs

Of course, the remedies are not readymade or easy to take. One method is to curb bank lending to industries. The policy of "no easy money" was followed by the Reserve Bank, restricting the supply of bank finance and enhancing the rate of lending The outcome of this one-sided restrictive policy has been further fall in production and the consequent rise in prices.

In fact, the restrictions on bank credit have crippled the industrial growth rate. Concern at the restrictions has been voiced by the representative bodies of manufacturers. But the Government reported to what may be called a short-sighted policy, keeping in view short-term remedies against the growing malaise. The result has been that the remedy has been worse than the disease.

Looking at the manufacturing industry as a whole, no industry can afford to finance its productive efforts from its own financial resources. This is due to shrinkage of private finance on many counts and the largenes of investments involved.

The promoters of industry seldom put 10 per cent of their own money. The rest of the capital outlay is borrowed from the banks and other financial institutions. That means the employment of public money in such ventures. Therefore, there is not much of logic or finesse in arguing that there is much difference between public sector enterprise and the private enterprises. Both are largely employing public

E P Radhakrishnan is a Freelance Journalist.

TABLE 1

Expansion in Bank Credit

(Rs. crore)

	1970-71	1971-72	1972-73	1973-74	1977-78	1978-79
A. Net bank credit to Govt.	512 (10.8)	1180 (22.4)	1326 (20.6)	946 (12.3)	2454 (22.2)	1867 (13.9)
B. Bank credit to commercial sector	1048 (19.4)	913 (14.1)	1361 (18.5)	1972 (22.6)	2727 (14.7)	3972 (18.7)
Of which						
C. Commercial bank credit to commercial sector	707 (17 7)	578 (12.3)	853 (16.2)	1286 (21.0)	1769 (13.4)	2730
D. Total (A - B)	1560	2093	2687	2928	6426	5839
E. C as % of D	45 3	27.6	31.8	43.9	27.5	46.8

money and on that account, technically speaking, there should not be any difference in their outlook.

Modern Management

But what is bedevilling the system is a total and woeful lack of monitoring on the performance of the industrial units. This is much more pronounced in the case of nearly 150 public sector units. The physical and financial management of these enterprises leaves much room for modernising. The managers of these enterprises display a woeful lack of the latest management techniques; nor does there appear to be any serious effort being made to update them.

The result has been that the massive capital invested in these is tied up with formalities, and not enough care is being taken to make the investment productive to the utmost. The return on the capital invested is too low and the costs of the projects are escalating, both for want of timely execution of the projects and the delay in sanctioning many of these because of political bickerings.

The attempts by the Reserve Bank to cure the evil of inflation through the mechanism of restrictive credit policy has to be welcomed, although its effect in the totality would be only marginal. The success of this policy, however, depends on many factors. For instance, if the policy were to succeed and give the desired results, the credit delivery machinery—both at the macro and micro levels—should be so formulated as to take into account the requirements of production-oriented credit and the need of monitoring the end-use of such credit.

An analysis of the total bank credit to the production needs of the industries shows that during 1970-71 to 1978-79 the rate of growth in bank credit to the commercial sector was higher than the net bank credit to the Government. The share of incremental bank lending to the commercial sector in credit-induced monetary expansion has not shown any consistent trend. In fact, the proportion of bank credit to the commercial sector declined from 63.2 per cent in 1976-77 to as low as 27.5 per cent in 1977-78 and to 46.8 per cent in 1978-79

Benefit to Consumers

The main categories of borrowers from the commercial banks were food procurement agencies, priority sectors of industry and others. Because of the large production of foodgrains, over 13 crore tonnes, the Food Corporation of India turned out to be the largest borrower from the banks. Nobody should regret it. But the overhead charges of the Corporation, standing at about 18 per cent, would make us assume that the Corporation should do something to reduce the overhead charges and give the benefit of the reduction to the consumers.

The Central Government has not increased the issue price of foodgrains to the consumers, although procurement prices of wheat and rice has been steadily going up with a view to giving incentive to the primary producers. This means that on food alone a huge amount of subsidy has to be incurred It worked out to about Rs. 450 crore in 1978-79 This too, has contributed to a big drain on the limited financial resources and has thus contributed its share to inflation.

Table 1 will illustrate the expansion in bank credit from 1970-71.

Faulty Implementation

The implementation of the restrictive credit policy of the Reserve Bank, pursued since 1974, has been faulty. It has not succeeded in containing expansion in bank credit to the commercial sector. However, the policy has succeeded in raising the share of priority sectors in bank credit to the commercial sector. The available evidence suggests that commercial bank credit to medium and large industries has played, during the last few years, a less important role in causing monetary expansion than credit for food procurement and advances to the priority sectors.

Nevertheless, the rate of increase in non-food commercial bank credit to borrowers, other than priority sectors, was of the order of 15 per cent (compound) annually in the post 1974 period. During 1978, as per the data on sectoral deployment put out by RBI, (gross) commercial bank credit to medium and large industries increased by 14.8 per cent (December, 1978 over December, 1977), and accounted for 65.7 per cent of the increase in non-food credit to borrowers, other than priority sectors.

The rapid expansion in bank credit to the commercial sector, notwithsanding the pursuit of a restrictive credit policy, was due to a high rate of growth in the

(Contd. on page 27)

Impact of State Intervention in Marketing

G. S. Kainth

THE importance of marketing policy in economic uplift of the developing countries, like India was recognised only recently. The public intervention in foodgrain marketing is primarily intended to bring the activities of the sellers and buyers in conformity with the basic development goals and also to achieve prices, prevention of artificial scarcity and so on. On account of food shortages in certain parts of the country, the Government established zones for regulating zonal movement of foodgrains to nationalise the food distribution and control price structure. This article seeks to critically examine the impact of zonal curbs on the marketing system in India.

To study the problem of market integration or the degree of price relationship, the markets shown in Table 1 were related purposively.

Table 1

Selected markets for wheat and paddy

Market	Foodgrain	
	Wheat	Paddy
Consuming and producing markets of Punjab	Amritsar Abohar Ludhiana Patiala Moga Khanna	Amritsar Ajnala Taran Taran Khanna Ludhiana Patiala
Terminal markets in India	Delhi Bombay Hapur Khagaria	Delhi Bombay Khagaria

For these markets, the time series data of equivalent varieties were available. The Government zonal policy measures, in Punjab for selected foodgrains, were classified into free trade, multi-State zone and single State zone periods. The wholesale monthly price data for equivalent varieties of selected foodgrains, namely, wheat and paddy, were obtained from the published sources for each policy period. Though there was a gap of time when a particular policy was repeated, yet it became necessary and logical to pool the price data to study inter-market price relationship. The data on the cost of shipment for one quintal of the selected foodgrains from the selected markets of Punjab to those of the selected terminal markets were obtained from the private traders. Thereafter, the coefficient of correlation during the different policy periods and for the pooled situation were computed.

No doubt, the raw price data contains the trend and seasonal components which gives an upward bias to the correlation coefficients. As pointed out by George Blyn, the price series data should contain the trend and deseasonalised before computing the correlation. This is indeed a very good warning and should be followed if permitted by the specific situation in view. However, in this study it could not be done owing to different Government policy measures, and a single continuous series of price data was not obtained. As such, the correlation coefficients of the raw price data were computed, subject to the above constraints.

The markets could be imperfect on account of defects inherent, such as, absence of complete knowledge on the part of the buyers and the sellers, or due to the cause outsides the system, such as the Government-imposed restrictions on the free movement of commodities and transport bottlenecks. The price differentials between the selected markets of Punjab and the relevant terminal markets in other States under different zonal policy periods were compared with the cost of shipment in Table 2. Data on the cost of shipment are based on interviews with traders. As such, should be taken only as a proxy in the absence of actual data.

It is evident from Table 2 that the restrictions on the free movement of foodgrains on private account sharply increased the price differentials, in general. The price differentials in case of wheat between Amritsar-Hapur, Amritsar-Delhi and Amritsar-Khagaria went up from Rs. 0.92, Rs. 1.16 and Rs. 6.70 per quintal during the free trade period, to Rs. 9.40, Rs. 5.62 and Rs. 18.30, respectively during the multi-State zone period and further to Rs. 30.48, Rs. 21.62 and Rs. 49.26 per quintal for the same set of markets when the zonal restrictions were further tightened and Punjab was declared as a single State zone.

Similarly, in case of paddy the price differentials on per quintal basis between Amritsar-Delhi and Amritsar-Bombay increased from Rs. 0.18 and Rs. 0.33 during the free trade to Rs. 2.43 and Rs. 9.19 per quital during the multi-State zone period and further to Rs 3.29 and Rs. 22.33 per quintal, respectively, when Punjab was declared as the single State zone.

Table 2 clearly indicates that the price differentials in the absence of the zonal constraints were the lowest. Subsequently, when the zonal constraints were imposed, the price differential between the Punjab markets and that of other markets got widened. As a result, prices in Punjab remained relatively depressed compared to those prevailing in the deficit markets.

G. S. Kainth is Lecturer in Economics at Khalsa College, Amritsar.

Table 2

Price differential and cost of shipment for wheat and paddy

(Rs. per quinta

Foodgrain market	Free trade period		Multi State zone		Single State zon	
	Price differential	Cost of shipment	Price differential	cost of shipment	Price differential	Cost of shipment
Wheat						
Amritsar-Delhi	1.16	6 70	5.62	6.07	21.62	7.60
Amritsar-Bombay	13.15	11.18	1.59	10.96	17.64	12.07
Amritsar-Hapur	0 92	7 22	9.40	7.00	30.48	8.55
Amritsar-Khagaria	6.70	9.77	18.30	9.62	49.26	10.14
Paddy						
Amritsar-Delhi	0.18	6.70	2.43	6.07	3.29	7.66
Amritsar-Bombay	0.33	11.18	9.19	10.96	22.33	12.07
Amritsar-Khagaria	0.40	9.77	16.64	9.62	10.46	10.14

Market Inefficiency

The hypothesis that the imposition of the zonal constraints on the free movement of foodgrains on private account affected the price differential between the markets of Punjab and the relevant terminal markets in other States could be further tested by working out the coefficients of variation of prices of selected foodgrains under the different zonal policy periods in the selected markets. The results obtained are presented in Table 3.

Table 3

Coefficients of variation of foodgrains prices

Foodgrain	Free trade period	Multi-State zone period	Single State zone priod
Wheat	9.8039	11.4346	24 8356
Paddy	1.64	9.70	13 2805

During the free trade period, the coefficients of variation in prices of selected markets was low, that is 9.8039 per cent for wheat. This suggests a more consistent spatial price structures among the elected markets. During the multi-State zone period, the coefficient in the same set of markets was 11.4346 per cent which is higher than that of the free trade period. This indicates that when the restriction on the movement of foodgrains on private account were tightened, the inter-market price differential widened. During the single State zone period, the inter-State price differtential of wheat sharply increased, which is evident from 24.8356 per cent, the coefficient of variation in the prices of wheat in the selected markets during the policy periods.

The coefficient of variation in the prices of padc in the selected markets during the free trade peric was as low as 1.64 per cent, whereas it rose to 9.7 per cent during the multi-State zone period and fu ther to 13.2805 per cent during the single State zor period.

Thus, it can be seen that the price differentials i the absence of zonal restrictions were the lowest, and i general, were lower than the cost of shipment. Sul sequently, when the zonal restrictions were laid dowi the price differentials between the Punjab market an that of other State markets increased sharply, and i many cases exceeded the cost of shipment. This r flects spatial marketing inefficiency. In other word the foodgrain marketing system in India is highl imperfect in nature due to the introduction of zon policy which closed down the normal channels and tl trade relations of the private traders operating in tl deficit and surplus States of the country. L. F. He rman who studied broadly the marketing and pric policy in India arrived at the same conslusion that tl largest single cause of price fluctuations was the sy tem of zones. He estimated that since 1965 abo 15 per cent of the total variation in rice price, wei due to the zonal curbs. When the zones did n intervene, markets tended to follow similar pri patterns.

Market Integration

The problem of market integration in respect c wheat and paddy was also examined by using the co relation analysis. The coefficient of correlation wei worked out on the basis of the monthly price data fc different zonal periods. The degree of correlation be ween the price in various markets was taken as an i crease of the extent of market integration. No doub such an analysis tells only little about the market inte ration, but it served a very useful purpose as a suppl ment to our earlier analysis.

Table 4

Correlation coefficients of wheat and paddy

Foodgrain markets	Free trade period	Multi-State zone period	Single-State zone period	overall
Wheat				
Amritsar-Delhi	0.9029	0.8321	0.0741	0.7821
Amritsar-Bombay	0.7431	0.2861	0.2116	0.4324
Amritsar-Hapur	0.9041	0.7389	0.1354	0.6985
Amritsar-Khagaria	0.7968	0.5603	0.1025	0.7473
Paddy				
Amritsar-Delhi	0.6321	0.7251	0.4921	0.5216
Amritsar-Bombay	0.4137	0.1431	0.0021	0.1433
Amritsar-Khagaria	0.7446	0.3217	0.0368	0.6977

As per Table 4, in case of wheat the coefficient of correlation during the free trade period was quite high between the Amritsar market on one hand, and Delhi, Bombay, Hapur and Khagaria markets on the other. These correlation coefficients of the same set of the markets, which were at 0.9029, 0.7431, 0.9041 and 0.7968, rspectively, declined during the multi-State zone period. This decline was maximum in Bombay, because the city no longer formed a part of this zone and hence price fomation had no impact on price movement in Punjab market. Again, when Punjab was declared as a single State zone, these correlation coefficients further declined to 0.0741, 0.2116, 0.1354 and 0.1025, rescpectively. Similarly, the coefficient of correlation in respect of paddy also showed a sharp decline when the zonal restrictions were imposed. Thus, the correlation analysis also supports the hypothesis that the imposition of zonal constraints, on the free movement of foodgrains distorted regional price pattrens and markets no longer remained integrated.

The discussion reveals that the imposition of zonal restrictions on the free movement of foodgrains on private account had created imperfection in the marketing system. Thus, if the markets are freed from the rigidity of zonal constraints, regional price differential will reduce. The Government policy should, therefore, aim at facilitating stifb competition, rather than restricting it in the marketing system. □

Consolidating Consumerism in India

Continued from page 7

ing the consumer movement in the country so that sufficient funds are created and made available at the hands of the voluntary organisations, registered as societies under the law.

The Government agencies should be made more active and efficient in conducting raids. The corrupt officials must be summarily dismissed from service without going through the existing procedures. Law must be amended for this purpose. Likewise, the culprits should be given prompt, condign and duly publicised punishment. Law should be made more stringent for selling substandard products, adulterated articles, under-weighing, over-charging, misleading advertising and creating artificial shortages. It is not necessary for me to spell out the details for each of these in this article. The bureaucrats are competent enough to do this exercise but, unfortunately, they often take the line of least resistance. They try to play safe instead of making a cumbersome procedure simple enough, and they can do this if they have the will.

Caveat Venditor

It is well known that the Prime Minister, Shrimati Indira Gandhi feels very much concerned for the poor people of this country. She has often proclaimed serious action against the economic offenders but the loopholes in the law enable the culprits to get away merrily. So also the corrupt officials at all levels, who collude with them for their personal gain at the cost of the society. Therefore, lack of quick and effective legal action and corruption in the implementing machinery are the two things we have now to do away with lock, stock and barrel, if the consumer resistance movement is to be built and consolidated for the benefit of the community as a whole. The idea of consumerism is well developed in the affluent West. Can it therefore be considered a 'luxury' in a poor country, like India? We should now create a rule of caveat venditor—let the seller beware.

It must be recognised that once the concept of consumerism gets going, it would be beneficial not only to the consumers but, more than that, to the producers as well. Well satisfied consumers are a great encouragement to the production activity and its planning for future. While spurious commodities have short lives, good quality things are always in demand. While shortages create a panic, the consumers also try to find alternatives or would reduce the consumption of a scarce commodity.

A high priced commodity can fleece the consumer in the short-term. However, ultimately he loses his faith in the commodity itself and reduces or does away with its consumption. Lower priced articles may yield a less return per unit of item, but the total profit would be higher for the seller because of larger sales. Consumerism blesses both the producer and the consumer, and is, therefore, not to be viewed with suspicion by the former or with callousness by the latter. □

Effect of Taxation on Consumption Savings and Investment

S. Balarami Reddy and
G. Chandrasekhar Rao

THE fiscal policy of a country is merely an instrument for achieving the aspirations and goals of its people in developing her economy. The general objectives of tax policies are to mobilise the maximum investable resources in both the private and public sectors in the desired direction. The existing tax structure in many developing countries is not conducive to a rapid growth of the tax revenues. Taxation potential of a country depends on the excess of its actual consumption over the minimum essential need.

The problem of capital formation in a developing economy, as it confronts the public finance, breaks down into three main parts. The first is concerned with financing of social overhead investment, which must be undertaken directly by the Government. The second deals with an intermediate zone in which investment projects are in private hands, but the funds are made available through the government finance. The third is oriented to the necessary incentives to private investment as it is influenced by taxation.

Economic Surplus

The provision of the necessary capital for the above requirement needs mobilisation of an economic surplus. If investment is to increase, there must be growing surplus above the current consumption that can be tapped and directed into productive investment channels. Capital formation involves three steps: increase in the volume of real savings, so that resources can be released for investment purposes; channeling of savings through a finance and credit mechanism, so that investable funds can be collected from a wide range of different sources; and the act of investment itself, by which resources are used for increasing the capital stock.

Taxation is a major instrument of social and economic policy. It is noteworthy that the growth and stability of the economy depends not only on fiscal decisions, but also hinges on many other government decisions.

Economic Development

The fiscal authorities, by varying the level of taxes or rates of taxes and the subsidies, can alter the amount of purchasing capacity at the disposal of the consumers. This influences expenditure(or consumption), savings and investment. It may aim at improving the productivity in the private sector and securing sufficient investment in these areas, which would promote economic development. How the taxes are imposed and their rates are determined may affect the willingness to save and invest.

Incidence of Taxes

In general, taxes which fall most heavily on the lower income groups will tend to reduce consumption greatly and savings slightly. As a result, aggregate demand in low income groups falls and causes discouragement and dissatisfaction. Taxes which fall most heavily on people in the upper income levels will tend to reduce savings and investments to a greater extent rather than reduction in consumption. Generally, wealthy individuals, have made adequate provision for future. which tend to reduce savings more than consumption when higher taxes are levied on their income.

Incentives for Savings

Direct investment is made by higher income groups. People with lower incomes lend their savings to others who in turn invest them. Higher income tax rates on the upper brackets may seriously discourage the undertaking of risky investment due to low return after payment of taxes, unless some other incentives are given for investment. The investment of small savings of the low income groups depends upon the people, who receive them as borrowers.

There might be an object to the use of taxation as an instrument of forced savings in view of its effect on the incentives to encourage voluntary savings. In many developing countries, the flow of voluntary savings is very meagre. In these countries forced savings may result in replacement of private investment by public investment. In fact, much of private investment is directed towards projects with low priority. It does not mean that it should be curtailed, but it should be redirected into more productive channels. A mixed economy like India cannot progress without constantly increasing private investment.

Consumption Curb No Palliative

The Government should put more emphasis on taxation and savings of business through profits, rather than on individual savings through a curtailment of consumption. Taxes may exert a considerable influence upon the general business and employment conditions through their impact on consumption, savings and investment. The Government exerts great influence on total spending, and hence on output, through its expenditure and tax policies. It alters total spending directly by varying its own spending or indirectly by raising or lowering taxes. If expenditure is increased or taxes lowered, the spending of incomes by recepients requires additional output, which generates additional income and spending, and the cycle repeats itself.

The cumulative increase in GNP is, therefore, a multiple of the initial increase in the Government expenditure or reduction in taxes. Correspondingly, a reduction in expenditure or increase in taxes reduces GNP by a multiple of the initial action. If expenditure and taxes are increased simultaneously by the same amount, the effect of these two steps will not cancel one another, because rupee per rupee expenditure has a more potent effect on the economy than tax changes.

Regulatory tax is designed merely as a discouragement rather than as an outright prohibition of a particular practice. The inflationary or deflationary effect of a tax depends upon who pays the tax and what he would do with the money if he does not have to pay the tax.

S. Balarami Reddy and G. Chandrasekhar Rao are Lecturers in Commerce in Venkateswara University Post-Graduate Courses, Kavali, Andhra Pradesh.

The monetary policy also plays an important role in stabilisation policy. Suppose the Government increases expenditure or reduces taxes, if GNP increases, individuals and business firms will need additional cash to conduct their business. If the money supply fails to increase, the higher demand for cash will drive up interest-rates. The higher interest rates tend to reduce investment and spending, offsetting the effects of initial increase in spending. Thus, the fiscal policy requires assistance from the monetary policy to be fully effective.

It is not always easy to predict what effect a particular tax will have or even to asses accurately the effect of the present taxes. This is because most taxes fall partly on consumption, partly on savings and partly on investment, and these three aspects are in turn influenced by many other factors. It is extremely difficult to determine exactly the tax paying capacity of the people. Everything depends on what the state does with the revenue it raises. The more the state does for its people in general the greater the amount of taxation the people are able to bear but it should not be forgotten that taxation can be deterrent to both work and savings, and so above a certain level it can be economically disadvantageous. □

Crusade Against Consumer Exploitation

Continued from page 5

will also be made in the rural areas and the resettlement colonies so that even in the smallest groups of the society, a forum is created, where the complaints of, and hardships suffered by, the consumers are fully ventilated and further processed for taking necessary action.

Food Testing Laboratory

It is also on the cards to set up a food testing laboratory under the auspices of the federation for taking speedy action on complaints of food adulteration. This is because the existing laboratories in Delhi are inadequate to cope with the problem. The activities of the federation in all these fields will require action and co-operation of not only the other voluntary organisations, but also the Government and the trade organisations. Without their co-operation, it is not possible to obtain the desired results.

Resource Centre

The IFCO is planning to establish a resource centre, where anyone interested in the consumer movement, will persue consumer reports from all the organisations in India, Asia, the Pacific region and Europe. Besides, there will be clippings from different newspapers, films, slides and tapes of consumer interest.

The need of the leaders of the consumer movement is keenly felt. The federation, therefore, proposes to organise workshops for leadership training. The idea is to develop in the leaders the consumer eye, the technique of enrolling volunteers, the knack to raise funds and educate the consumers. □

Control Of Weeds In Crops

MANY obnoxious weeds such as Parthenium hysterophorus pose a serious threat to agriculture, animal husbandry and dairy industry. Manually uprooting parthenium is not only costly but also causes dermatitis to allergic persons. The use of persistent herbicides is also not desirable because of their residual effects and consequential hazards to ecology whereas short-lived herbicides tend to be ineffective. In both the cases, the amount of herbicides applied is much in excess than required for the control of the weeds because of the need to compensate the loss of herbicides by drifting, leaching, evaporation and decomposition. At present formulations based on 2, 4-D such as weedone-48, weedar-96 and fernoxone etc. are being used. A need was therefore felt to develop a selective and cheaper herbicide formulation free from the above defects for the control of parthenium and other weeds. No precise data on the demand of the product is available.

In order to overcome the defects enumerated above, investigations were carried out at National Chemical Laboratory (CSIR), Poona, and a novel controlled-release selective, cheap herbicide formulation for the control of parthenium and other weeds has been developed. In this formulation a minimum dose of herbicide is released in a controlled fashion at fairly constant rate for a desired period of time with minimal threat to ecology. The NCL process involves the preparation of 2-4 dichloro phenoxyacetyl chloride from 2-4D and its treatment with a waste cellulosic material such as saw dust under suitable conditions. The technical material is suitably granulated. The new product has following advantages over 2-4D formulations available in the market.

(a) Quantity of active ingredient per acre is much less than the conventional formulations. (b) No repeat application is needed. (c) There are no drift hazards to adjoining crops. (d) The product is more effective since translocation due to rains, etc. is minimum. (e) Due to granulation, NCL product lends itself to easier application. (f) NCL product costs less (g) Many undersirable effects of 2-4D are eliminated (germinating grasses grow, soil residues are minimum) The product prepared in the laboratory has been tested by a number of agricultural research institutes, and industries, and has been found effective in controlling parthenium and other weeds in grazing, irrigated and agricultural fields where crops such as sugarcane, maize, wheat, jowar, rice etc., are cultivated. A number of reports on the evaluation of the NCL formulation have been obtained. □

Economics of Small Scale Industries

Emphasis on Efficiency Dimension

Neela Mukherjee
and
Amitava Mukherjee

THE main thrust of the new Industrial Policy is on the "effective promotion of cottage and small industries, widely dispersed in rural areas and small towns". The admitted objectives being industrialisation of the rural landscape & generating employment potential to absorb unemployment and under-employment in the country. A new dimension of the Government's policy in this regard is the establishment of the District Industries Centres. Under the single roof of these Industries Centres, all the services and support required by small and village enterpreneur will be provided.

An attempt may be made to examine 3 aspects of Small Scale Industries in the Indian experience :

A. Inter-Scale Aspects

(1) Efficiency of small scale industries vis-a-vis the large scale ones.

(2) The place of small scale industries in the Indian Economy.

B. Intra-Scale Aspects

(3) Inter-Industry comparison in the small scale sector.

The study of these aspects will be made with special emphasis of employment generation and industrialisation.

Unorganised Sector

A study of this nature is at once confronted with problems typical of an unorganised sector. The small scale sector in India is decisively unorganized and therefore, availability of data acts as a veritable constraint. An indepth study, of the problems earlier stated, in the following paragraphs is of necessity, limited. The findings of this study are, therefore, more suggestive than exactly definitive. They highlight certain important aspects of small scale industries which require further investigation.

Inter-Scale Aspects : Efficiency Dimensioned

A. Measurement of efficiency of any industry is a difficult task and there is enough scope to debate the measures of efficiency. We elect to accept 5 ratios to compare the efficiency of small scale sector vis-a-vis the large scale industries and are reported in a tabular form hereunder.

(i) Output/Fixed Capital Ratio	1.28	3.88
(ii) Worker/Fixed Capital Ratio	3	16
(iii) Value Added/Fixed Capital Ratio	0 33	0.63
(iv) Value added/Worker	9693	4056
(v) Output/Worker Ratio	37256	24982

Neela Mukherjee, Indian Economic Service in the Directorate General of Commercial Intelligence and Statistic Calcutta, and

Amitava Mukherjee, Management Services Division United Bank of India, Calcutta.

The smallness of output/fixed Capital ratio in the small scale sector as compared to the ratio in the large scale, imply high capital productivity in the small scale industries. Indeed capital was nearly 120 per cent more productive in the small scale sector than it was in the large scale sector in the year under reference. Judged in this perspective, the crucial role of the small scale sectors, in India's economic effort cannot be over emphasized, particularly so when India is capital starved and labour surplus economy.

The Worker/Fixed Capital Ratio is 520 per cent more in the Small Scale Industries vis-a-vis the ratio in the Large Scale Industries. This is expressive of the fact that the Small Scale Industries are much more labour intensive than their large Scale counterparts. A high Worker/Fixed Capital ratio, therefore, lends ample support to the widely held belief that the Small Scale Industries are more suited to the generation of employment in an extensively labour surplus economy like India. The need for greater employment of the Indian Economy is well catered to by the Small Scale Industries.

The Value added/Fixed Capital ratio is also higher in the Small Scale Industries than in the Large Scale Sector. It is 92.42 per cent higher in the Small Scale Industries. Increase in the value of inputs implies inter alia, that inputs are being combined with fixed capital more optimally in the Small Scale Industries than in the Large Scale ones. It, implicitly at least, lends ample support to our earlier observation that capital is more productive in the Small Scale Sector as compared to what it is in the Large Scale Industries.

But the disquietening feature of the efficiency dimension of Small Scale Industries is that Output/Worker ratio is nearly 50 percent less in the Small Scale Industries than in Large Scale Industries. The low Output-Worker ratio may be explained by the accepted characteristic of Small Scale Industries that they have high labour intensity. However, an assertion that low Output/Worker ratio could be because of lower efficiency of workers in Small Scale Industries units than the efficiency of their counterparts in the Large Scale Industries, seemingly makes an awful lot of sense and it is admitted that the Small Scale Industries units being small in size cannot exact the economics of Large Scale production; they, being capital scarce, neither employ a technology of production that is sophisticated nor can they ill-afford plants & equipments that are up-to-date & modern. It is quite likely, therefore, that labour is less productive in the Small Scale Industries than what they are in the Large Scale Sector.

It is also observed that value added/worker ratio is 9693 and 4056 in the Large Scale & Small Scale In-

dustries respectively. This obviously implies that labour is comparatively less active in the Small Scale Industries than in the Large Scale ones, in increasing the value of inputs. This, in very many words, suggests that our remark in the foregoing paragraphs in respect of productivity of workers in Small Scale Industries is appropriate, at least suggestively.

B. Position Dimension

The position of Small Scale Industries in national Economy is quite significant. As is apparent from Table 1, that in 1975-76, Small Scale & Village industries constituted 40.07 per cent of the country's total Industrial Production. Whereas in the year 1975-76, the industrial production of the Private Large Scale Sector amounted to Rs. 13,750 crore, and that of the Public Sector (including Joint Sector) amounted to Rs. 8,240 crore, the contribution of Small Scale Industries was as high as Rs. 13,750 crore.

What is more important is that Small Scale Industries have been contributing a steady and high percentage, to the national export of India. As is clear from Table 2, percentage of Small Scale Industries' Export to total exports have been 16.5, 15.97 and 17.07 in the years 1974-75, 1975-76 and 1976-77 respectively. And the percentage of Small Scale Industries' non-traditional exports to total non traditional exports have been even more impressive over the years 1974 to 1977 ; it has been 38.28, 35.58 & 40.76 per cent in the years 1974-75, 1975-76 & 1976-77 respectively.

Itra-Industry Aspects

It would now be rewarding to examine the behaviour of the Small Scale Industries inter se. in terms of (a) Employment Generation (b) The Output Production (c) Growth in Fixed Capital and (d) Interaction of the above three components.

(a) The employment generation potential of all Small Scale Industries is beyond question. This is abundantly amplified by Table 3, read with Table 4

Table 1

Share of Small & Village industries in industrial production

(Rs. in crore)

1 Public sector including joint sector	8,240
2 Private large scale sector	13,750
3. Small Scale & Village Industries . . .	
(i) Small Scale Industries	
(a) Factory sector (SIDO)	6,206
(b) Factory sector (NON-SIDO)	1,551
(c) Non-factory sector (SIDO)	4,987
(ii) Village Industries	
(a) Handlooms	1,600
(b) Khadi & Village Industries . . .	200*
(c) Handicrafts	380
(d) Coir	40
(e) Silk-sericulture	100
4. Total Industrial Production	37,054
5. 3 as percent of 4	40.07

* Figures relate to the units assisted by the Khadi and Village Industries Commission.

Table 2

Share of Small Industry in Total Exports.

(Rs. in lakh)

	1974-75	1975-76	1976-77
1. Total exports from India .	332883.00	394162.00	514200.00
(i) Exports of traditional items . . .	243289.48	276324.00	344744.00
(ii) Exports of Non-traditional items . .	89593.52	117838.00	169456.00
2. Total exports from s. s. sector . . .	53790.31	62947.85	87823.43
(i) SSI-traditional exports (e. g. cashew kernal and cashew nut-shell liquid, lac, & Tanned Hides & skins). . . .	19491.71	17457.60	18411.20
(ii) SSI-non-traditional exports	34298.60	45472.25	69412.23
3. Percentage of SSI exports to total exports . .	16.5	15.97	17.07
4. Percentage of SSI-non-traditional exports to total non-traditional exports .	38.28	35.58	40.96

that in all Small Scale Industries, total employment grew steadily over the years 1966 to 1970, the sole exception being "Leather and Leather based Industries" where employment registered a negative growth rate of 1.9 per cent over the years under reference. The highest growth rate in employment was registered by "Rubber and Rubber-based industries" : a growth rate of 7.8 per cent approximately.

(b) The production trends of the Small Scale Industries may be called satisfactory. Table 4 read with Table 6 is indicative of the fact that output grew steadily over the period 1966 to 1970, in the Small Scale Industries generally. The "Leather and Leather based Industries", however, like its employment growth component, registered a negative growth rate of 2.1 per cent. The highest growth rate in output was achieved in the "Other Industries" (Soft drinks, Watches, Photographic & Optical goods, etc.) Category—14.6 per cent to be followed by "Chemical and Chemical Based" & "Paper and Paper Based" industries—both had a growth rate of 11.3 per cent over the 5-Year period 1976 to 1970.

(c) It is well accepted that the Small Scale Industries have low fixed capital requirement. Though this fact cannot be disputed, it is observed that fixed *capital requirement* of all Small Scale Industries have increased, at least in money terms. This can be seen in Table-5. And Table-5 read with Table-4, gives a clear picture that the highest growth rate in fixed capital has been in the "Rubber & Rubber Based" industries : a growth rate of 27.8 per cent. And the lowest growth rate in fixed capital requirement was observed in the "Angro-based" industries : a growth rate of merely 4.98 per cent.

(d) The Inter-action Term : Having discussed the Employment output & fixed capital growth rates separately an examination of the inter-action of the three growth rates may now be taken up. It is seen from Table-6 that those Industries which have recorded high growth rate in fixed capital have also registered a a high growth rate in output. The highest growth rate in fixed capital have been found in :

(i) Rubber & Rubber based Industires . . 27.8%
(ii) Paper & paper based Industries . . 17.5%
(iii) Other Industries (Soft Drinks, Watches etc.) . 17 2%
(iv) Chemical & Chemical Based Industries . . 11.4%

The growth rate in output has been found in the following order :

(i) Other Industries 14.6%
(ii) Chemical & Chemical Based . . . 11 3%!
(iii) Paper & Paper Based 11.3%
(iv) Rubber & Rubber Based 9 1%

fixed capital growth rate of 17.5 per cent, has among the lowest Employment growth rate of 1.34 per cent.

Findings

We may now summarise our findings, thus,—
(i) Capital is much more productive in the Small Scale Industries than in the Large Scale Industries. In the kaliedoscope of development efforts being made by a capital scarce economy like India, the higher capital productivity in Small Scale Industries, holds out special hopes for the nation.

(ii) The Small Scale Industries are 500 per cent more labour intensive than the Large Scale Industries.

Table 3

Employment in Small Industries

Industry	1966	1967	1968	1969	1970
1. Agro-based :	327796	334803	343620	345568	410767
2 Leather and Leather based :	24977	20955	22608	19239	23580
3. Paper and Paper based :	88941	90806	87638	90687	95128
4. Rubber Based :	17149	17065	18499	20982	22504
5. Chemical and Chemical Based :	71639	71721	79555	76844	88504
6. Mineral Based : (including Glass and Ceramics)	142002	144411	134746	144744	146252
7. Metal Based :	410331	401514	392199	421667	431090
8. Other Industries	147249	142407	155559	153314	156012

Table 4

Output in Small Industries

Industry	1966	1967	1968	1969	1970
				(Rs. Lakhs.)	
1. Agro-Based :	67980	69504	72499	83302	91506
2. Leather and Leather Based :	8833	6046	7065	6696	7550
3. Paper and Paper-Based .	8582	7721	8823	9983	12907
4. Rubber based :	3039	2472	3686	4705	3407
5. Chemical & Chemical Based :	16893	17629	20303	20190	26974
6. Mineral Based : (including Glass and Ceramics)	9305	9711	8406	10591	11654
7. Metal Based	62644	64987	66814	82808	85521
8. Other Industries	14392	15760	18597	22404	23891

However, no such link can be identified in respect of movements in fixed capital growth and output growth rates. Only in respect of Rubber & Rubber Based Industries, where growth in fixed capital has been highest, (27.8 per cent) the growth in employment has been highest, (7.9 per cent), and in leather & leather Based Industries, where fixed capital growth rate was among the lowest, the lowest growth rate in Employment—a negative growth rate of 1.9 percent was found. In all other industries nothing interesting was found in the movements of fixed capital and Employment growth rate. For instance Agro-Based Industries which have the lowest growth in fixed capital 4.98 per cent, has the third highest employment growth rate of 4.95 per cent and "Paper and Paper based Industries" which has the second highest

(iii) Output per worker is much lower in the Small Scale Industries than in the Large Scale ones. This casts a spell of shadow on the efficiency component of labour in the Small Scale Sector vis-a-vis the Large Scale Sector. Much more attention needs to be focussed on this perspective of the Small Scale Industries, particularly when we are going in for these industries in a big way as a major industrial policy decision.

(iv) The value added per worker is much lower and value added per unit of fixed capital higher in the Small Scale Sector than in the Large Scale Sector.

(v) The contribution of Small Scale Industries to India's total exports have been fairly stable at around 16 per cent.

Table 5

Fixed Capital in Small Industries

(Rs. lakhs)

Industry	1966	1967	1968	1969	1970
1. Agro-based :	7618	8650	8468	8667	9707
2. Leather and Leather Based :	495	294	460	461	537
3. Paper and Paper Based :	2645	2686	2810	3687	5059
4. Rubber Based :	424	319	667	846	889
5. Chemical and Chemical Based	2431	4686	8402	5548	3830
6. Mineral Based : (including Glass and Ceramics)	2776	3129	3105	3353	3520
7. Metal Based :	12775	13720	15526	16723	19542
8. Other Industries :	3580	3782	4908	6036	6266

Table 6

Inter Industry Comparison in Small Scale Sector
Period 1966 to 1970

Industry	Growth rate in fixed capital	Growth rate in employment	Growth rate in output
1 Agro-based :	+4.98	+4 95	+8.06
2. Leather and leather based :	+ 5.2	+1.9	—2 1
3 Paper and paper-based :	+17.5	+1.34	+11 3
4. Rubber and rubber-based .	+27 8	+7.79	+9 1
5 Chemical and Chemical based :	+11 4	+5.04	+11.3
6. Mineral-based including glass and ceramics :	+5.97	+0.6	+4.5
7 Metal-based :	+11.0	+1.49	+.09
8 Other industries : (Soft drinks, watches etc.)	+17.2	+1.9	+14 6

(vi) There has been an increase in the requirement of fixed capital in all Small Scale Industries. This increase in fixed capital has been higher in industries which require more sophisticated method of echnology of production. Hence it could be suggestive of the fact that modernisation & rationalization programme in recent years have caused some capital intensity in the Small Scale Industries.

(vii) Industries which have higher capital growth rate have also registered higher output growth rate. This reinforces our earlier conclusions that capital is more productive in Small Scale Industries & that capital intensity of Small Scale Industries are on the uprising. □

Inflation And Credit Curbs

Continued from page 18

deposit resources of the commercial banks, which doubled from Rs. 2,300 crore in 1975-76 to Rs. 4,700 crore in 1978-79.

Large-scale Production

An effective remedy to check inflation is large-scale production of a variety of consumer goods and to enforce price control statutorily. This requires a policy decision at the highest level, with a certain amount of financial and fiscal discipline by the nation. The public sector should also enter, in a big way, the field of production of consumer goods. It cannot go on looking passively, leaving this field area at the mercy of the private sector.

This brings to the fore the necessity of a rethinking on the Plan priorities and finding necessary resources to produce these goods. It is not easy to enumerate the list of essential consumer goods because in the very nature of the complex and sophisticated society the list goes on inevitably expanding. But some exercise at the highest level is called for in adjusting the needs of the nation to the capacity and if required to regiment the needs to some extent.

Limits on Bank Accounts

The Planning Commission should go into these aspects of the problem. Unfortunately, what has happened over the last 28 years of planning is that although, well-intentioned, the implementation of the project has been tardy.

In the Indian society, which has given unto itself the concept of mixed economy, no strict regimentation is possible. Nor would it be feasible, since there are many political overtones attached to it. But what can be attempted is a happy marriage of the two extremes and to go ahead with a bold and realistic planning for plenty. The Government should support this and not put hurdles in the way of the programmes of the Planning Commission. It has to find the necessary money by raising additional resources from the public and also to drastically cut down public expenditure.

One possible, but a risky, way to check inflation is the curbing of money power. This would be drastic and would need the political will.

There should be some sort of a moratorium on bank deposits to be operated by account holders. A reasonable limit for operating accounts should be fixed and the balance be frozen for a limited period, say for five years. On the frozen balance the banks should be allowed to give a higher rate of interest.

Whether this measure will have the political sanction of the people is a moot point. But grave situations need drastic remedies. □

Leather Exports

B. R. S. Gupta and Dr S. C. Sharma

LEATHER and leather products have acquired a predominant position in India's export trade. The items exported include : tanned leather, foot wear and leather goods. The industry's export earnings at present account for seven per cent of India's total exports However, exports of finished leather and leather goods constitute only 10 per cent of the industry's total exports.

The world trends are conducive to the government's policy owing to the high cost of the labour and other factors. The developed countries can profitably import larger quantities of finished leather and semi-tanned leather from India where labour is comparatively inexpensive and manufacturing techniques have been modernised. It is a matter of great pleasure that India has been elected unanimously a member of the International Tanners' Council. India is the first Asian country to be admitted to the council Membership of the council would enable the Indian leather industry to be fully exposed to world trends and development both in the technological and commercial areas and help it to up-to-date its production and marketing techniques.

Export markets were very firm and the prices in India were also very firm, although there was a lot of resistance to shoe manufacturers all over the world. Total exports of leather and leather items from India in 1978-79 amounted to about Rs. 330.4 crore against about 257.9 crore, the previous year. We will be lucky if we maintain the level of exports between Rs. 300 and 350 crore in 1979-80. The current general buoyancy witnessed on the leather exports marks a welcome trend. But a closer look at export figures for different categories during April-August 1979 as compared with the corresponding period of 1978 underscores the inherent weakness in the industry which is labour intensive and which offers vast scope for higher unit value realisation. Overall exports of tanned hides and skins, leather and leather goods have gone up by about 40 per cent from Rs. 133.5 crore to Rs. 186.54 crore Exports of all types of tanned hides and skins increased by about 46 per cent from Rs. 33.92 crore to Rs. 49.51 crore. Export of finished leather increased by 67 per cent from Rs. 71.89 crore to Rs. 120.05 crore. However, during this period exports of leather goods increased by only 9.5 per cent from Rs 11.50 crore to Rs. 12.59 crore, their share of the total having fallen from 8 6 per cent to 6.8 per cent.

Pollution Hazards

Substantial increase in the exports of both finished leather, tanned hides and skins reflects the keen demand for these products in the developed countries which have become sensitive to the pollution hazards in this industry and are, therefore, phasing it out in favour of the less developed countries. It is clear, however, that the market for leather products has not shown a comparable growth in those countries since the manufacture of the leather goods from leather does not raise questions of pollution and there is a tendency in the developed countries to protect the domestic industries concerned.

In the short run, the Indian industry should certainly take advantage of the growing demand for the hides and skins and the finished leather, as it has undoubtedly done. This may enable the industry to sustain or even better the 35 per cent export growth rate recorded in 1978-79 and boost exports beyond Rs. 400 crore mark in the current year. In fact, buoyancy in international demand for this range of leather may even make it feasible to achieve the Sixth Plan leather and leather goods export target of Rs. 600 crore by 1983 However, the planners wanted the exports of foot-wear to make a major contribution. Available indications in this regard are discouraging to say the least. Exports of leather footwear during April-August this year at Rs. 687 crore were just one per cent more than in the corresponding period of last year. Needless to add foot-wear components, mainly shoe uppers, have registered a 30 per cent growth, their exports during April—August 1979 came to just Rs. 4.88 crore. As regards other leather goods, their exports at Rs. 4.68 crore were 24 per cent lower than in April-August 1978 It would seem that the soft option stemming from the rising international demand for tanned hides and skins and finished leather is leading to the neglect of the required effort in the production and export of the leather goods including shoes.

It has been revealed by an UNCTAD study that India may be in a position to produce five billion square feet of leather worth about Rs. 5,000 crore in the next twenty years. This presupposes the establishment of a leather chemicals industry with an investment of Rs. 1,000 crore. The Task Force on Leather and leather goods industry appointed by the Commerce Ministry has pinpointed low capacity utilisation and the non-availability of sophisticated component and chemicals at economic prices are the twin problems afflicting the industry. Improvement in the quality of raw materials and increasing the availability of hides and skins will go a long way in stabilising production. A ban on the export of live animals to West Asian Countries, setting up of new meat factories and expansion and modernisation of old ones are some of the urgent steps to be taken to ensure uninterrupted supply of hides and skins to the industry. The import of modern machinery and requisite chemicals at reduced rates of import duty. as recommended by the Task Force, may also be necessary if

B R.S Gupta and S.C. Sharma are freelance Journalsts.

the industry is to register vertical growth. Perhaps collaboration agreements with western manufacturers for the manufacture of shoe uppers, glove components, footwear components, etc. with built-in export marketing clauses are likely to prove profitable. In fact, poor marketing has been the bane of Indian leather industry. The industry has, therefore, been able to advantage of general buoyance in the world market for fashionable and sophisticated leather goods, particularly leather garments. It is to this that the leather industry's attention will now have to be turned.

Some Important Suggestions

1. Needless to add. considerable amount of research is being carried out on tanned leather, nothing is being done to maintain the quality of the raw hide and this is more important. Calcutta with its concentration of 400 old tanneries, employing 20,000 people, can well become a major exporting centre for footwear if only some technical expertise is imparted to the craftsmen and the quality of the raw hides is maintained. A statewise organisation be formed for the purpose. Proper manning of the centres is needed and that outdated implements, still being used, should be replaced. The State Government should issue instructions to various municipalities to hand over carcasses to these units. At present the kendra is able to procure only about one per cent of the total carcasses in the state. Village panchayats could help in the procurement.

There is a great need to restructure the scheme of the Khadi and Village Industries Commission so that it could allot more money for such centres.

There is also a need that the KVIC should directly set up such centres in the states where the Khadi Boards were not setting them up.

Unlike many other countries where raw hides and skins are bye-products of meat industry, in India hides and skins are obtained from fallen animals, mainly due to the widespread prejudice against the slaughter of animals, with the result the quality of raw hides and skins from fallen animals is not comparable with that available as bye-products of meat industry Further, consequent on unscientific methods of slaughtering animals, the hides and skins suffer from flay cuts, warble marks, bacterial damages, etc. The rate of recovery of skins and hides is also low in India and is estimated at about 12 per cent as against 37 per cent in the U.S.A. Poor quality and low availability have, therefore, adversely affected the supplies of leather in the country Since the quality and availability of hides and skins can only be improved by modernising treating methods such as flaying, curing, storing and transportation, the existing slaughter houses need to be modernised.

Shortage of vegetable tanning material is yet another problem faced by the industry. There is no organised effort to procure the indigenously available tanning material such as Wattlebark. If indigenous resources are properly developed and exploited, India not only need not import any vegetable tannig material but may even be able to export some. Besides. vegetables tanning material, there is a shortage of other raw materils such as basic chrome crystals, chemicals and finishing auxiliaries, dyes and flat liquor and casein. Indigenous dyes are not suitable for processing high quality leather, because they are neither shower-proof nor perspiration proof. In order to compete with the high quality products of the advanced countries and also to increase productivity, it is necessary to mechanise fully the tanning industry.

Besides, there is a dire need for market research, quick delivery and quality control for achieving a breakthrough in exports to world markets. Maintaining high quality is the only way to meet the competition. The leather used for manufacturing leather goods should, therefore, be highly processed. The supply of the right type of leather to the manufacturers should be ensured either by importing leather to the manufacturers or by importing the necessary machinery and spare parts for processing leather, close watch should be kept on the frequent changes in the design patterns. If measures like market research, publicity, study-cum-sales tours, organising and taking part in trade fairs and exhibitions are taken, there is no doubt that India will be able to achieve the leather export target envisaged in the current plan.

The mushroom growth of organisations needs to be checked and the multiplicity of functions currently performed by them needs to be co-ordinated and integrated by bringing all the existing organisations under one umbrella, namely, the National Leather Board. This Board is conceived as a statutory Board similar in character to the existing Commodity Boards, responsible for improving and strengthening the production base of the leather industry The Board would have four wings each charged with specific responsibility for one major area of activity namely :

Resource Development and mobilisation; Porduct Development; Export promotion; and Economics and Statistics. The Board shall have an Official Chairman preferably a technologist and a panel of members representing industry, trade, legislature, economists management and marketing experts, government of those states in which the industry is concentrated, consumers and labour.

As for functioning; the government of India should institute a Leather Development Fund. The National Leather Board besides undertaking the allotted centralised functions, should co-ordinate and guide the activities of the state boards.

The Corporation should be similar in character and functions, to the bye-products corporation of the U.S A. It should be kept outside the jurisdiction of the National Leather Board mainly the problem of utilisation of bye products is more closely linked up with the problem of setting up of slaughter houses rather than with the development of leather and leather goods industry This corporation will also be responsible for the improvement and modernisation of existing slaughter houses. In the sphere of research and development, the corporation's responsibility will be to identify the problems of utilisation of bye-products and make arrangements to slove them.

The Herd Management Corporation would be primarily concerned with evolving and implementing programme for improvement of livestock. Such programmes can not be entrusted to the National Leather Board which has already been burdened with many other onerous tasks.

There is an urgent need for organising a federation of these associations so that the diverse interests represented in it are given due consideration before forging a unified view-point of the industry for making representations to the government. Such a federation may be given due representation on the proposed National Leather Board. □

Rs. 6,573 Crore For Central Plan

PRESENTING the interim budget for 1980-81 in Parliament, the Finance Minister, Shri R. Venkataraman, estimated an over-all budgetary gap of Rs. 1,235 crore at the existing rates of taxation.

The total receipts are estimated at Rs. 18,980 crore. The total expenditure in the next year would be Rs. 20,215 crore. The Finance Bill, which was also introduced by the Finance Minister, sought to continue the existing rates of income-tax for 1980-81. No change in the rates of customs and central excise duties was contemplated. The auxiliary duties of customs and special duties of excise at the existing rates were also to be continued for the year.

The budget estimates included a total Central Plan outlay for the next year at Rs. 6,573 crore, as compared to Rs. 6,015 crore in the last year's budget. The budgetary support for the Central Plan was placed at Rs. 4,500 crore. The Finance Minister disclosed that the Government was considering to revamp the Food for Work Programme, and make it a more potent instrument of employment-generation. Rs. 70 crore have been provided for the scheme. Taking this also into account, the budgetary support for the Central Plan will be Rs 4,570 crore, as against the budget estimates of Rs. 4,411 crores for 1970-80 This showed an increase of Rs. 50 crore.

The Finance Minister indicated an increase of Rs. 126 crore towards the Central assistance for the State and UT plans. Including the schemes of the Rural Electrification Corporation and assistance under 'Income Adjusted Total Population' formula, the total Central assistance would be Rs. 2,823 crore, as against Rs. 2,697 crore in the last year's budget.

Shri Venkataraman said that the Planning Commission had, in consultation with the States and Union Territories, settled the outlays for their Annual Plans for the next financial year. A reasonable step-up in the outlays has been provided so that the tempo of development may be maintained. The Finance Minister further said that the States had assured the Commission that they would keep the resources at the assessed level and adhere to the commitments made by them to mobilise additional resources to finance these outlays.

Food subsidy would account for Rs. 600 crore, which is at the same level as in the revised estimates for the last year. The subsidy on imported and indigenous fertilisers would also be of the same order as in the last year, at Rs. 600 crores. There is to be a marginal step-up in the Defence expenditure from Rs. 3,273 crore in the last year to Rs. 3,300 crore in the next year.

The Finance Minister indicated that the share of tax revenues accruing to the Centre at the existing rates was estimated at Rs. 8.725 crore, as against Rs. 8,219 crore in the revised estimates for the last year.

Receipts from market borrowings were put at Rs. 2,500 crore, as against Rs. 1,961 crore in the last year. Small savings collection are estimated to fetch Rs. 1,000 crore, as against Rs. 925 crores in the last year.

External assistance, net of repayments, was estimated at Rs. 1,196 crore, as against Rs. 918 crore in the revised estimates for the last year. □

Increased Railway Traffic Anticipated

THE interim Railway budget for 1980-81 envisaged a target of 21.45 crore tonnes of originating revenue earning traffic, as compared to an estimated 19 4 crore tonnes last year. The budget also projected a growth of 6 per cent of passenger traffic. The Railway Minister, Shri Kamlapati Tripathi, who presented the budget estimates for 1980-81 in Parliament for obtaining a 'vote-on-account' to cover the anticipated expenditure up to the end of July, did not propose any change in the fare and freight rates.

With the realisation of goods and passenger targets fixed for 1980-81, the Railways estimate gross traffic receipts at Rs. 2,545.35 crore and the total expenditure at Rs. 2,583.47 crore. The net overall deficit was anticipated at Rs. 38.12 crore. The gross traffic receipts on the basis of the current fare and freight rates for 1980-81 would be Rs. 190.91 crore more than that of the revised estimates for 1979-80.

The working expenses would show an increase of Rs. 126.40 crore over the revised estimates for the preceding year, out of which Rs. 56.30 crore was accounted for the payment of productivity-linked bonus to the staff. The appropriation to Depreciation Reserve Fund has been enhanced by Rs. 20 crore, while an increased provision of Rs. 20 crore has been made for the Pension Fund.

The Plan outlay was tentatively fixed at Rs. 650.64 crore, i.e. almost the same as for 1979-80. However, the *inter se* priorities under various Plan heads were being given a fresh appraisal. The extent to which this outlay can be increased, out of the overall resources of the country, would be reflected in the regular budget to be presented later. □

BOOKS

Technology

Technological Forecasting by P. K. Rohtagi, Kalpana Rohtagi and B. Bownder, Tata—Mcgraw Hill Co. Ltd., New Delhi, Rs. 87.

FOR WELL OVER a quarter of a century now, there has been an enthusiastic effort to introduce technologies in various sectors of our national life. It is also well known that critics have not spared the effort on the ground of lack of firmness and goal—oriented supporting measures. In this process, technological forecasting as such has always remained as the exclusive preserve of the specialist. The book under review has been described modestly as "an introductory course to orient policy planners and others about the forecasting process and its decision-making in a developing country". However, it is, in effect, a remarkable descriptive compendium of knowledge that is essential to all concerned with the future of India.

The reader cannot but be struck by the well-thought out design of the contents which, in the first five chapters not merely clarifies the conceptual background and definitions of technological forecasting but also covers the various methodologies and errors involved in the related exercises. Chapters 4 and 5 deal with the growth and application of technological forecasting and assessment and leads the reader on to the very important subject of the applicability of the various techniques to India. The significance of technology assessment in India from the societal point of view has been clearly stated. The chief merit of the treatment is the new outline of the various steps that might be taken to build up viable forecasting techniques and how to use these forecasts in decisions-making in developing countries. That India herself has made important strides in these fields has not prevented the authors from emphasising on the need for each country to perform its own technolgy assessment for a given future technology.

The three chapters 7 to 10, are illustrative of the scope for the application of technological forecasting technique in the areas of population control and health, food, education and energy for India. Both in terms of the high degree of clarity of thought underlying the treatment as well as in the delineation of the policy measures these chapters would reward their close study. Besides, in several respects thte condensed presentation of facts and figures would relieve the reader of the tedium of going through the massive literature that accumulated on the subjects.

The last two chapters 11 and 12 are the most fascinating and useful. They deal with the future economic, political and social systems in India, the present efforts and growth of future research. They are bound to convince the reader that a great deal has already been done in the country under the auspices of the National Council of Science and Technology, the various Commissions (Planning, Atomic Energy and Electronics) and the IITs. The authors have also carefully listed 10 categories of problems and issues that have hampered technological forecasting activities in India. These call for urgent attention.

The authors have shown their preference for the Delphi technique over others. The presentation of facts, findings and views are refreshingly effective, eschews all strident tones or phraseology and is free from biases. Chapter 13 on Technologies with highest priorities in future India followed by important appendices admirably presents its subject matter and deserves high encomium as a first rate effort in this field.

B. N. Nair

Balanced Forest Policy

Forest Economics, Planning & Management by Dr. L. C. Sharma, Bishen Singh Mahendra Pal Singh, Dehradun, Rs. 75.

INDIA needs forests for their valuable economic products and for a balanced ecosystem. The burgeoning population has put a tremendous pressure on forests. A timber tree, maturing in 40 years, is reduced to an ugly stump in as many seconds. Recless exploitation, indiscriminate felling of trees and denudation of forests are bringing about recurring floods, landslides and droughts, causing untold misery to the people. Under such trying conditions, India's forest wealth cannot remain inexhaustible, however bountiful the nature may be. It is high time, as suggested by the author, all experts—economists, engineers, foresters, demographers and scientists—join hands to reach a workable model for harnessing the forest resources for optimal and economic use.

In 347 pages, the author, a specialist in forest economics, has made an important contribution in the field. The main purpose of the dissertation is to help the forestry students, practising professionals and planners in applying the tools of economic analysis to the present-day complex forestry problems. It is a useful source of reference on such diverse subjects as uses of forest products, production and marketing of wood, utilisation of wood in industry, labour problems, management aspects and the contribution of the forestry sector to the national economy. It deals with the economic history of forestry, types of forests, their climate and edaphic distribution. A few international illustrations are both illuminating and refreshing. The author has estimated the demand for wood through the end-use method. A lot of data has been collected for this, which would be of immense help to the planners.

The *magnum opus*, though bridging a void in the field of forest economics, suffers from several shortcomings. The economic theory leans a little too heavily on the side of the neo-classical orthodoxy. This is not relevant to India, where mixed economy is the order of the day. The historical background on the Indian forestry is not uptodate, and ends too abruptly. Much of the recent developments, though delicate and controversal, have not been taken into account. These aspects are relevant to the future of the Indian forestry. A variety of economic problems, cropping up in forest transport, have not been discussed. For example, the factors determining the layout and density of the road network in forests, investment in roads versus shorter skidding distances, and so on.

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Is this water safe for drinking?

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Artist : **P. K. Sen Gupta**
Advt. Manager : **T. R. Maheshwari**

Editorial Office

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The World Water Decade

Iain Guest

ASK someone from an affluent city suburb to characterise water and you would probably get a curious stare and something along the lines of "colourless, tasteless and abundant." But ask the same question of a villager in the Third World, and the answer might well provide a web of insights into a life of extraordinary hardship. For here water does come from the ubiquitous tap. It has to be carried—usually by women—from a well or a river up to a mile away, several times a day. It is usually insufficient, and what there is may be so badly contaminated that it risks causing severe diarrhoea.

The fact that safe drinking water and its corollary, proper sanitation, are taken for granted in the more affluent countries but are a matter of life and death in the developing world has been monitored with increasing concern by WHO in recent years. This concern expressed itself in the UN agencies' own way of generating a sense of political urgency—the large international conference.

The Habitat Conference, held in Vancouver in 1976, stated as a goal—"fresh water for all by 1990." The UN Water Conference, at Mar del Plata, Argentina, in 1977, made this more specific and designated the period 1981—90 as the International Water Supply and Sanitation Decade, while 1978—80 would be the years for collecting data and evaluating the dimension of the crisis.

Thirdly, the 1978 Alma-Ata Conference, in the USSR, on Primary Health Care spelt out in broad outline some of the ways and means of incorporating the decade into a new two-part strategy for health : more "relevant" health services, and more emphasis on preventive health with all-round social and economic development.

Linked Problems

Sanitation is closely related to drinking water—indeed the rows of defecating children that are a common sight in much of the Third World are a more dramatic reminder of the problem than the absence of fresh water. Several studies have stressed that providing only safe drinking water or only facilities for disposing of excreta-without the other half of the solution—will be unlikely to lead to an improvement.

Access to Drinking Water

How serious is the crisis ? WHO carries out regular surveys on the coverage of community water supply and excreta disposal services in the developing countries. The most recent one published in 1975, found some 1,230 million people without adequate water supply and 1,350 million without sanitation. More specifically, by the end of 1975 the total population of the developing world, excluding China, was roughly 2,000 million people, of these, 70 per cent lived in the rural areas and the rest in cities. While 57 per cent of the city population had acess to community water through house connections, and another 21 per cent through public standposts, in the rural areas only 22 per cent had acess. A total of 38 per cent of the Third World's population had access to safe drinking water.

Sewerage Connections

In the cities, 25 per cent of the population had house connections to sewerage systems and an additional 50 per cent were served by household systems. In the rural areas, only 15 per cent had any access to sanitary latrines. Of the total number of people estimated to be without these most essential of services,

Iain Guest is a freelance journalist.

more than 700 million are children—an important and alarming figure, particularly as 1979 had been designated International Year of the Child.

Diseases Associated with Water

The first consequene of the lack is disease. The WHO estimates that as much as 80 per cent of all diseases in the world is associated with water. It can take several forms. Firstly, there are germs ingested through drinking contaminated water: these cause typhoid, gastro-enteritis, cholera. Then, communicable diseases such as scabies and trachoma, transmission of which is favoured by chronic water shortage or poor quality of water. Thirdly, diseases caused by parasites that inhabit water and burrow through the skin—like schistosomiasis, which is carried by snails, or dracunculinsis, carried by the guinea worm. Finally, there are the carriers (vectors) of disease which breed in bodies of water. The most serious of these are mosquitos, responsible for the current alarming upsurge of malaria, and the flies which cause river blindness (onchocerciasis).

In round figures an astonishing number of people suffer from these water-related diseases at any one time: 400 million with gastro-enteritis, 160 million with malaria, 30 million with river blindness, 200 million with schistosomiasis.

This connection between the lack of clean, piped water and disease is now well established. In one case, in a cholera outbreak in the Mulange district of Malawi, the families who escaped the disease were those with piped water which, though untreated, was coming from upstream and was therefore uncontaminated. Those who suffered were those without piped water.

Fresh Water Comes with Money

WHO surveys have noted another characteristic of fresh water—it comes with money. One 1970 survey found that in countries with a per capita income of less than US $ 110 a year, over 80 per cent of the population still lacked excreta disposal services and fresh water. For most countries with incomes within the range of $ 110 and $ 1,000, the proportion is considerably smaller and ranges from 20 to 70 per cent.

Problems of Slums

Within countries, the disparity in services between urban and rural areas is often accounted for by the higher income of town dwellers, and their ability to apply greater political pressure in order to get services. Slums, however, stand out as an important exception—particularly since they are expected to expand dramatically in the next 14 years.

Doubling of Population by 2000 A.D.

In a limited sense, the situation is improving, WHO's 1975 mid-decade survey showed that the number of urban dwellers served by drinking water had increased from 316 million in 1970 to 450 million in 1975—from 67 to 77 per cent. In rural areas, the increase was from 182 million to 313 million—14 to 22 per cent. For excreta disposal, the increase was from 71 to 75 per cent in urban areas, and from 11 to 15 per cent in the countryside. But this is still far below the rate of increase called for by the International Decade. In addition, the UN Fund for Population Activities (UNFPA) estimates that irrespective of the success of family planning, the world's population is certain to double by the end of the century.

Furthermore, bare statistics can be falsely optimistic or may mask deficiencies. Now water system can be entirely leak-proof, even in an advanced industrialised country. Where water can leak, contamination can enter. In one survey of 401 cities in the United States, two researchers found that in one out of ten cities, 25 per cent of the water was being lost. As with food lost during storage from rodents, water lost from leaky pipes in the developing world can amount to as much as 50 per cent.

Water supply is often intermittent. This is serious, because when the pressure falls off there is no resistance to the intrusion of pollutants from the outside. An estimated 27 per cent of the water supplies in Africa south of the Sahara are intermittent, and as much as 91 per cent of the water supplies in South-East Asia. Again, many cities employ two systems of water—one safe for drinking, and the other for washing streets and watering gardens. When they run side by side, there is serious risk of contamination.

The 1981-90 water decade concerns only safe drinking water and sanitation. It does not directly concern water management, which was discussed during the Desertification Conference held in Nairobi in 1977, nor the challenge of increasing and mobilising water resources so as to meet food requirements. But clearly, all are interconnected, and it will be one of the aims of the decade to stress this.

Malnutrition and Water

Malnutrition and a lack of fresh water are interrelated. Malnutrition undermines the individual's resistance to such diseases as diarrhoea. Diarrhoea itself further reduces the intake of food and causes loss of body fluids, resulting in further malnutrition. Just as the need for food is greatest in the developing countries, so is the need for water: in a dry climate the body requires, on average, up to twice as much water (5 litres) a day.

The Mar del Plata Conference in Argentina called for an unparalleled effort to be made by governments and the international community—a call that was reiterated by last year's WHO/UNICEF Conference on Primary Health Care held at Alma-Ata in Soviet Kazakhstan. In a joint report to the conference, the heads of the two agencies noted that "Plentiful supplies of clear water help to decrease mortality and morbidity, in particular among infants and children, as well as making life easier for women. Countrywide plans are required to bring urban and rural water supplies within easy reach of the majority in the shortest possible time."

Preventive Health Care

That conference ended with 22 recommendations and the Declaration of Alma-Ata. In broad terms, these said that the best form of preventive health care is social and economic development. They stressed the need for increased investment, and underlined that the form of technology and manpower to be involved must be relevant to the needs and resources of the countries involved.

Investment on Drinking Water

Of course, this is more easily said than done, as with all conference clarion-calls. What are the obstacles? In 1970, 88 countries were asked precisely this question in a WHO survey. The replies were

illuminating; 48 gave lack of internal finances as the first problem; 10 cited the lack of external resources, 11 said they lack a proper administrative structure, and 19 said the chief concern was the lack of trained personnel. It is not hard to see why money looms so large. Between 1970 and 1975 the amounts invested on water throughout the world were on average $ 67 per person in urban areas, and $ 17 in rural areas.

The World Bank and WHO reported to the Mar del Plata Conference that $ 140,000 million would be needed to reach the target of "clean water for all by 1990." For this to be achieved, investment on water supplies in urban areas would have to be increased one-and-a-half times and in rural areas four times, while eight times as much would have to be spent on sanitation.

Less Aid to S.E. Asia

Where will it come from? On past performance, from the countries themselves. External aid from donors in the industrialised world has been falling behind the two targets set by the UN: one per cent of all net flows, or 0.7 per cent of the GNP for official development assistance. In 1970, net aid from the 17 western member-countries of the Development Assistance Committee (DAC) was $ 17,400 million instead of the target of $ 22,000 million. Of the money invested on water in 1971, only 12 per cent in urban areas was met by aid and nine per cent in rural areas. In the same year $ 710 million of aid went to community water and $ 142 million to sanitation. But even these figures disguise the fact that more than half the aid went to Latin America and only two per cent to South-East Asia, where the need is even greater.

Catch Phrases

It is not, of course, simply a question of money. It is a question of political will and priorties. The Alma Ata Declaration talks of the need to involve the community—almost a catch-phrase by now, but essential if the Water Dacade targets are to be met. Community development starts with the family. Since women are usually the carriers of water, and often control the family's hygiene and health, they are the first obvious target. In Kenya, for instance, the women's associations are actively promoting basic family health and sanitation. Third World mothers cope marvellously well with their family's health in trying circumstances, but they probably need to be told about the benefits of fresh water and sanitation. They may not be aware that diarrhoea (which, according to the 1975 World Bank report, was the leading identifiable cause of death in Paraguay, Guatemala, and El Salvador) can be secured by administering a simple sugar and salt solution to replace lost body fluids. and that there is no need for expensive drip treatment in hospitals. Again, people may have to be encouraged to act together to construct a simple tubewell pump, since the only pumps in operation may have been ones owned by rich farmers.

Appropriate Technology

"Community development" implies appropriate tools or technology—another catch-phrase. But the acid test of technology is whether villagers will in fact use it. Well-meaning aid programmes have introduced latrines into villages only to find that they are not used—because they are malodorous, have to be emptied, are uncomfortable to use, and draw public attention to a bodily function which many prefer to perform at night.

The British development agency OXFAM has designed a latrine currently in use in Viet Nam as one of the best available in the Third World. It cuts down disease, and also turns human excreta into organic manure, producing some 6,00,000 tons a year. After 45 days, when the excreta has been rendered bacteria-free, it can be removed from a hole in the back of the latrine. In the Republic of Korea, human excreta is turned into methane gas, for use in 50,000 rural households.

Community Involvement

One reason why the community should be involved from the earliest time in decision-making is the problem of maintaining pumps and latrines. These services, in fact, again raise the dilemma—who should pay? WHO's policy is in general that the communities should share the costs, partly in order to increase their sense of responsibility. And yet, having the poorest pay for the services which should ideally be free seems to be a contradiction.

Changing Priorities

In most countries at the most senior level—the government—it is not so much a question of the amount of money as a question of priorities. Even though the benefits stemming from having a healthy population are now well-established, it is as difficult for a government to direct sanitation and water services towards the poor as it is to change health priorities from city-based hospitals to rural health centres. Their difficulties may increase if government economists regard such services as "pouring good money after bad," and suspect that "community development" is another way of saying they will have no further control over how the money is used.

Whose Responsibility is Water?

Then there are the problems of administration. Whose responsibility is water—that of the health ministry or of agriculture, or of a separate department. If water is going to be shared by several ministries, there will clearly be problems of coordination. But if it is going to be under a separate administration, other concerned ministries may well argue that they should no longer be involved. Yet most countries which have rated water and sanitation a priority are setting up separate administrative systems.

One fact stands out: where governments have committed themselves to the objectives of the Water Decade, particularly with the active collaboration of village communities, improvements have been substantial. In the Dominican Republic in 1961, 43 per cent of the urban, and 83 per cent of the rural population lacked safe drinking water. The government set up a National Drinking Water Institute and the situation began to improve. "There was no single factor involved," says one WHO official. "It had a proper institutional structure; proper training of staff; built-in flexibility; cooperation between ministries and coordination of resources; right technical supervision; dynamic community organisation."

Similarly, Brazil has created a national sanitation plan and the National Housing Bank has been given the task of providing funds. The target is to provide

80 per cent of running water for the urban population by 1980.

In the old crowded streets of Ibadan, Nigeria, a "family group" of between 100 and 1,000 people makes an application to the Ibadan sewerage authority, and undertakes to provide land, labour, and running costs. The Government then constructs "comfort stations", with one toilet and shower for every 25 people.

International Cooperation

But governments by themselves cannot be excepted to carry the burden of increased investment. Part of the contribution to the Water Decade from international agencies will take the form of greater coordination. With WHO and the UN Development Programme taking the lead, collaborative action will involve the World Bank, UNICEF, the Food and Agriculture Organisation, the UN and the ILO. This in turn will seek to mobilise external cooperation for the Decade from bilateral and multilateral agencies. Within each country the UNDP resident representative will coordinate the needs. Each agency will continue to perform its special function, but the net results will be a much greater degree of coordination.

Regional Cooperation

One other important form of cooperation was recommended by the Mar del Plata Conference, and that was regional cooperation. This will take the form of strengthening the water commissions in the various regional UN economic commissions, and also making greater efforts to share common water.

Whether such sharing actually happens could determine whether governments have the will to make the Water Decade a reality. Countries downstream argue that they are at the mercy of those upstream, which can turn valuable water on and off at will (by closing dam sluices), or may cause pollution and contamination which is beyond their control. Countries upstream argue that they cannot be constrained by considerations outside their own frontiers. Agreements such as that between Bangladesh and India over the Farraka Dam across the Ganga, or between Brazil and Paraguay over the Parana River, suggest that international cooperation is indeed possible. (*World Health, January* 1979).

Guinea Worm Afflicts One Crore Indians

THE guinea worm disease is endemic in India, the Middle East and the tropical Africa. About one crore Indians are estimated to be suffering from the dread disease. The nation is paying a high price by way of low mandays, estimated to be about Rs. 20 *crore per year. Generally, the victims of the incapacitating disease are the economically weaker sections, particularly in the remote rural regions, where the safe drinking water facility is just not available.*

In 1967, *the state-wise incidence was reported as : Rajasthan* 0.62 *per cent of population, Maharashtra* 0.025, *Orissa* 0.034, *Tamil Nadu* 0.025, *UP* 0.024, *Andhra Pradesh* 0.08 *and Andaman and Nicobar Islands* 0.098. *According to the* 1957 *reports,* 23 *lakh persons were affected in Rajasthan,* 9 *lakh in Tamil Nadu and Andhra Pradesh,* 4 *lakh in MP,* 3 *lakh in Punjab. A* 1919 *study indicated the most affected areas in the country were : Mysore State* 39 *per cent, Bombay Province* 28, *Hyderabad State* 12, *Central India* 10.6 *and Rajasthan* 10. *Early reports stated the infection was found in* 240 *of India's* 330 *districts.*

Injestion Through Water

The Guinea worm larva spends a period of its life-cycle in several species of the cyclops, or the water flea, and the rest in the mammals, like man, horse, dog and cattle. During the first month, it is actively mobile in the body of the water flea, and later coils up till injestion by the mammalian host through the raw drinking water. The water flea is digested by the host, setting the larvae free. They migrate through the intestines to the loose connective tissues. In eight to 12 *months, they develop into adult worms. They are thread-like,* 50 *to* 120 *cm long and about* 2 *mm thick The pregnant female migrates to the skin, where a small blister is produced. On contact with the fresh water, the blister bursts, discharging a swarm of larvae into the water. Thus, the life-cycle of the guinea worm is repeated endlessly.*

The long gestation period is symptomless, and there is no method of diagnosing the infection in the initial stages. The onset of the symptom is of an allergic nature, and may be associated with urticaria, erythema, dyspnoea, pruritus, giddiness, vomiting or diarrhoea. When the worm is being pulled out, secondary infections may occur in the worm's human tunnel. The after-effects are arthritis, synovitis, ankylosis and contracturers of the involved limbs. Usually, one to five worms are recovered in a season. However, in some cases 20 *worms have been withdrawn. The infection gives so immunity, and there is always the danger of reinfection.*

Control and Prevention

The disease can easily be controlled and prevented. The direct cause of the disease is the step-well. Conversion of such wells into draw-wells, with a balustrade around its month and a cover over it is the first preventive step. The vicious cycle can be broken by stocking plankton-feeding fish in the infested waters. The disease is controlled by the administration of adrenaline. Since ages, the sufferers have contended themselves with winding a small length of the worm each day on a stick at the site of the open blister, until finally the entire worm has been withdrawn. Application of phenothiazine ointment around the mouth of the tunnel stupefies the worm and helps in its easy and early removal.

RURAL WATER SUPPLY

Dr. S. M. Shah

THE PROBLEM of supply of drinking water in our rural areas has been a formidable one for a long time. During the Fourth Five Year Plan, a bulk of the provision under the Plan was meant for the areas of acute scarcity and those endemic to water-borne diseases A Centrally sponsored scheme known as the 'Accelerated Rural Water Supply' (ARP) was introduced in 1972-73 to deal with the difficult areas. During the Fifth Five Year Plan, the programme gained momentum and formed an integral part of the National Programme of Minimum Needs (MNP).

During 1977-78, to implement the scheme in respect of the 'problem villages' (as identified in an assessment survey of 1972) in an accelerated manner, the Centrally sponsored scheme was revived under which a hundred per cent grant assistance was given to the State governments. This continued during 1978-79. As per the current plan (1978-83) an allocation of Rs. 1,458 crores has been envisaged for the rural water supply, including Rs 1,388 crores for the 'problem villages' under MNP and ARP.

Of the 1,43,500 villages covered by the Rural Water Supply Scheme under the Minimum Needs Programme (1974-78) and Accelerated Rural Water Supply Programme (1972-74 and 1977-78) by April 1, 1979, 58,000 villages were reported to be those which were categorised as the 'problem villages'. The 'problem villages' (1 53 lakh) were located in the hilly and desert regions where the nearest water sources were either 1.6 kms away, contained toxic elements dangerous to health, or endemic to cholera and guinea worm infestation, and other villages having inadequate and unprotected drinking water sources.

The general experience of development has been that the benefits of the welfare and development schemes had mainly accrued to the economically better off sections of the community and the 'poor' did not get their due share

Evaluation Study

At the instance of the Planning Commission, the Programme Evaluation Organisation (PEO) undertook an All-India 'Quick Study' of the Accessibility of the Poor to the Rural Water Supply with the main objective of ascertaining whether the 'poor' had received the facility of drinking water provided under the Minimum Needs Programme and Centrally sponsored Accelerated Rural Water Supply Programme'. For the purpose of this study, the 'poor' were operationally defined to be those who belonged to the Scheduled Castes, Scheduled Tribes, were the Landless Agricultural Labourers (did not own land but had a homestead). The specific objectives of the study were :

1. To ascertain the relative location of water points in areas inhabited by the 'poor' and the 'non-poor' in the villages covered under MNP|ARP;
2. To find out the proportionate share of the 'poor' and the 'non-poor' in the water available from such points;
3. To understand the reasons of the low or no share of the 'poor', if any;
4. To study the alternative sources of drinking water, if the full requirements of the 'poor' are not met from the sources provided under the MNP/ARP; and,
5. To suggest ways and means for correcting the imbalances, if any.

Methodology and Coverage

The evaluation study was conducted during October-December, 1978 in 99 villages of 34 districts (including 23 where PEO headquarters are located) falling in 17 States. 1,174 'poor' households selected for the study constituted 8.5 per cent of the total poor households (and 9 6 per cent of their population) in the selected villages. For the selection of the district, the general criterion, however, was based on the joint consideration of the location of a PEO field headquarters in a particular district and the operation of the rural water supply scheme under the MNP|ARP.

Instruments, Training and Field Work

Four precise instruments of observation were developed. Of these two were meant for the selection of samples and consolidation of household schedules canvassed by a field team. The remaining two instruments were meant for the collection of data at the village level and for interviewing the 'poor' respondents at the household level The instruments developed were pre-tested and discussed with the PEO field teams during the four training seminars organised for the study at different regional units.

Main Findings

The main findings of the PEO study are :

The Public Health Engineering Departments played a major role in the execution, maintenance, and repairs, as also the regular testing of water. However, in about one-fourth of the districts the responsibility of maintenance and repairs of the drinking water points rested with the Panchayati Raj Institutions—Zila Parishads/Panchayati Samities/Gram Panchayats.

Dr. S.M. Shah is Joint Secretary, Planning Commission

No water charges were reported to have been levied on the villagers for the use of public water points, except in the districts of Ahmedabad, Simla, and Thana. This was reported to be not willingly paid by the villagers, since they could not afford. The drinking water was made available mainly through pipes and bored/tube/drilled wells in all the 34 districts covered under the MNP. Of these, 16 districts were covered both under MNP and ARP.

In the selected villages, 1,304 drinking water points were identified, of which 774 were provided under the MNP (673) and ARP (101). Of the total drinking water points provided under the MNP/ARP, 621 were the public water points and 153 were the private water points. Their distribution by piped water comes to 544 and bored/tube drilled wells 230.

The drinking water points provided under the MNP/ARP covered, on an average, 45 households and 271 individuals per supply point. Average supply points per village under MNP/ARP come to eight due to higher percentage of piped water points.

In order to ascertain the relative location of the drinking water points in the areas inhabited by the poor and the non-poor, 465 localities were identified Of these, about one-third were inhabited exclusively by the poor, one-sixth exclusively by the non-poor, and nearly half (230 or 49.4 per cent) of them were inhabited both by the poor and the non-poor

The distribution of the drinking water points provided under the MNP|ARP in the above three types of localities reveal that hardly 16 per cent of the points were in the localities of the poor while 19 per cent were in the localities of the non-poor. The remaining 65 per cent of the drinking water points, however, were found in the mixed localities inhabited by the poor and the non-poor.

Share of the Poor

Thus, it is revealed that, on an average, the drinking water points were proportionately less in the localities exclusively inhabited by the poor as compared to those inhabited exclusively by the non-poor and the mixed' ones Thus, the average drinking water points per locality of the 'poor', 'non-poor', and 'mixed' come to 0.8, 1.9, and 2 5 respectively. In other words, while there were two drinking water points in the locality of the 'non-poor', there was only one on the locality of the 'poor'.

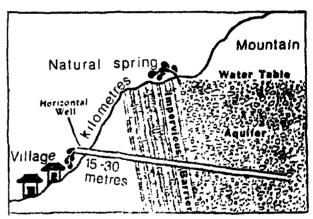
Private drinking water points in the localities of the 'poor' were much less (14 3 per cent) as compared to those in the localities of the 'non-poor' (39.9 per cent) benefitted by the public drinking points, ed under the piped water supply were less (9.8 per cent) in the localities of the 'poor' as compared to those of the non-poor (16.7 per cent). Again, private water private points in the case of 'poor' were only 11 as against 34 in the case of the non-poor. Private water points in the case of poor were reported only from the districts of Thane (1), Allahabad (2), and Varanasi (8).

Of the total households observed (8,278 or 23.6 per cent) benefitted by the public drinking points, the poor households constituted lesser percentage (44.8 per cent) as compared to the 'non-poor' households (55.2 per cent). While the benefits from the bored/tube/drilled wells were evenly shared by the poor and the non-poor in the case of public piped water points, the major benefit went to the non-poor.

It was gathered from the consensus at the village level that the main reasons for the 'poor' not being benefitted were . 'point at a distance/alternative sources and frequent breakdown/out of order', 'inadequate duration of water supply', and 'meant for higher caste groups'.

At the level of the selected 'poor' respondents as well, a larger number (49.1 per cent) reported the availability of water through bored|tube|drilled wells as compared with those reporting the availability of piped water (33.8 per cent).

Of the poor respondents reporting availability of drinking water, 51 and 45 per cent considered the bored|tube|drilled wells and piped water respectively inadequate. The main reasons for inadequacy as mentioned by them were : 'frequent breakdown|out of order', 'inadequate duration', 'point at a distance', 'dries up in summer|water level goes down', and 'inadequate taps|management'.

Development of horizontal wall for tapping water in the mountains

Of those poor respondents who were aware of the drinking water points in the villages. 65.5 per cent reported that they were using these points either regularly (39.8 per cent) or partly (24.8 per cent). The reasons for not using or partly using the drinking water points were : 'point at a distance', 'alternative sources at hand', 'frequent breakdown|out of order', 'unsuitable timings|duration of supply', 'dries up in summer| water level goes down', 'meant for higher caste groups', etc. Although 'point at a distance' has been one of the main reasons, it is worthwhile to note that about 93 per cent of the relevant respondents reported that the drinking water points were located within a radius of only half a kilometre from their residence. About 51 per cent of the respondents use dug wells as the alternative source of drinking water, whole 40 per cent go in for individual collections (pond, tank,

(Continued on page 14)

Problems of Water Pollution

B. K. Roy

MAN is the most important member of the eco-system, consisting of air, water, land and all living and non-living elements. Next to air, water is the most important parameter. Broadly, the total eco-system is one complete whole and all the components, including man, mutually influence each other in a balanced way. Any stress on one component can dislocate this balance ; once this dislocation of the balance crosses a certain limit, the degradation of the eco-system, often popularly called the environment, starts, which if allowed to perpetuate in an unchecked manner may reach incorrigible proportions. Ultimately, man's own existence may become difficult. Nobody obviously will like that such a situation should arrive and to face the dangerous consequences.

Water is a very important gift of nature, which next to air is the most used resource by us. Unfortunately, most of us scarcely appreciate the value of water and are generally profiligate in its use and indifferent to its conservation. Rivers and water courses are polluted through the effluents from the industries set up by us, and through sewers coming out of our habitats. We scarcely try to realise that what nature is providing us is seldom of pristine purity, about which the poets have been writing since the ages. Nature has endowed us with complex and vexing water quality problems which are difficult to understand but are easy to generate.

Critical Problem

The most critical of all the pollution problems concerning India is the problem of water pollution. The problem becomes alarming when water pollution conditions are juxtaposed on the general low level of development and poor nutritional conditions of the vast majority of the population. Water will be considered to be polluted when the impurity would cross a certain level such that the natural assimilative capacity of the water course will not be sufficient enough to purify it to the extent required for a particular use and special efforts for purification will have to be resorted to. The quality of water is to be viewed with respect to the various uses to which it is put. Primary quality criterion is undoubtedly of the water used for human and also animal consumption. In this case, if water carries disease vectors it becomes polluted for human consumption. An agriculturist will look for such a water quality which will not retard plant growth. For an industrialist the quality should be such that it should not hamper his industrial production, quality of goods and damage his machinery.

In India, we have to be highly concerned about water pollution since (a) people are often too poor to pay for a supply providing completely safe water through a public water system in home ; (b) the Government agencies often have to be clear about health benefits since any hope of financial returns will be smaller ; (c) the funds made available may be inadequate for an ideal water supply so that difficult choices between differing incomplete sort of improvements have to be made ; if these decisions are not made cautiously, the situation usually arises where a few people get excellent water supply and the vast majority do very badly indeed, and, (d) the diseases related to water supplies are more numerous, more important and more diverse in a tropical country like India where theoretically, effects of improved supplies are more complex.

However, we in India are in one way happily situated in respect of water pollution than probably many developed countries in the world. We have two very important natural endowments, namely, bright sunshine almost throughout the year and perennial rivers specially in the north, whose natural dilution properties are fairly high. The south Indian rivers are faster flowing which assures a higher purification factor. Consequently, Indian rivers are polluted only in patches in the areas where either industries are located or there is a heavy human concentration.

Importance to health

Some sort of relationship between water and health has been recognised from the time of Hippocratis, if not earlier in association of marshy places with fevers, and many unsophisticated communities in the tropics have similar views and are very conscious in their choice and use of water. Snow (1855) was the first to show the precise relation of a disease to water in his well-known studies on cholera. Budd demonstrated the spread of typhoid through water supplies and Ross related it with the outbreak of malaria. Both infections were shown to be transmitted by mosquitoes and other organisms living in and dependent on surface water.

Human health in India is very poor. During 1966-71 period, it is estimated that while 41 persons were born per 1,000, 19 per 1,000 died. Both these figures are expected to decline in future with better health care facilities. Death below five years in age is of maximum occurrence in India. Two causes of these deaths are identified : infectious diseases and malnutrition and throughout childhood and later life the chances of death from infections remain much higher in India than in rich nations. A number of these diseases are water related, particularly among very young children when malnutrition and infection work together tragically : intestinal infections related to water increase malnutrition, and it in turn predisposes to severe infections.

Between 20 and 30 different diseases may be affected by changes in water quality. They are usually classified by the microbe causing them into viral, bacterial, protozoal and helminthic diseases. What really

B.K. Roy is Senior Research Officer, Planning Commission

Table I—Waste Water Collection and Treatment Situation in Class I Cities

State	No. of Class I Cities	Population % without Sewerage facility	Waste water (million litres per day)		
			Generated	Collected	Treated
Andhra Pradesh . .	13	70.4	347.01	254.26	246.29
Assam	1	100.0	27.24	..	..
Bihar	11	73.2	309 69	195 93	126.65
Gujarat	7	26.7	538.18	538.18	521.86
Haryana	2	86.3	14.52	2.83	..
Karnataka	11	28.6	398.73	398.73	374.99
Jammu & Kashmir . . .	2	100.0	82.26	..	..
Kerala	5	78.6	154.00	43.12	..
Madhya Pradesh . . .	11	78.6	315 40	118 09	40 86
Maharashtra . . .	17	45.1	1812.58	1104.10	860 67
Manipur	1	100.0	9.84	..	..
Orissa	4	70.9	74 02	24.82	..
Punjab	4	53.9	198.15	140.40	27.70
Rajasthan	7	69.4	195.04	68.96	.
Tamil Nadu	17	58.9	323.90	159.30	52.98
Uttar Pradesh . . .	22	42.3	863.36	575.12	2.27
West Bengal	5	91.6	543.78	61.02	34.05
Delhi	1	25.0	708.24	531.00	444.92
Chandigarh	1	0 0	90 80	90.80	22.70
Total All India .	142	56 6	7006.74	4306.67	2755.94

matters is the mode of spread of the disease and not so much the source and it is more useful to have four main categories for discussing the problems.

Infections

First, infections spread through water supplies. There are two classical diseases, typhoid and cholera, and non-classical diseases, like infective hepatitis. These can be controlled by microbiological sterlity or microbiological improvement. The classical diseases are due to highly infective organisms where only a few are needed to infect someone, if pollution level of water is already very high

Second, diseases due to the lack of water for personal hygiene are skin and eye diseases like scabies and trachoma, or diarrhoeal diseases, like dysentry. These can be controlled if greater volume of healthy water is available. These are transmitted from one person to another mainly through faeces to mouth.

Third, water-based infections—transmitted through an aquatic invertebrate animal—are schistosomiasis carried by snails, which penetrates the skin, and can be controlled by protecting the user or ingested into the system through guinea worm which calls for protecting the source. These are all worm infections.

Fourth, infections are spread by insects that depend on water. The most common form of this category is through mosquitoes. They transmit a whole variety of pathogenes of which malarial parasites, arbivorous fevers and filariasis are the most important.

The health problems caused due to inadequate and poor quality of water supply in India are also increased, because the borders between domestic and other water are often blurred, and because of poverty and lack of facility people are forced to overlook the qualty of water which may be fit for one use but finds multiple uses.

Municipal Sewage

Two major sources of water pollution in India are the municipal sewage and the industrial effluents. While water pollution due to industrial effluents is observed only in the big cities and a few industrial towns, municipal sewage is a bigger criminal in this respect. A survey conducted by the Central Board for the Prevention and Control of Water Pollution on the Status of Water Supply and Sewage Systems in 142 class I cities (October 1978) has indicated that more than 80 per cent of water pollution in India is due to municipal sewage—Table I, and contribution of industries towards this is not significant, excepting nine big cities, where industrial pollution load is between 6 and 16 per cent. The survey clearly brings out the importance of having proper sewerage and sewage treatment facilities in the cities, by providing which to only class I cities, the water pollution problem can be solved up to 80 per cent.

Waste Water Disposal

In regard to collection and treatment and disposal of waste water the present status is far from satisfactory, as has been revealed in the survey. The proportion of sewered and unsewered population is 43 and 57 per cent, respectively. Only 59 per cent of the total waste water generated is collected through sewerage. Only 37 per cent of the waste water generated receives some form of treatment.

The value of the three factors as mentioned above are somewhat better in the case of the nine urban agglomerations, which have a population of more than 10

1 DPD/80—3

lakh each. The proportion of sewered and unsewered population is 56 and 44 per cent, respectively. Only 66 per cent of the total waste water generated is collected through sewerage. Only 57 per cent of the total waste water generated is treated before disposal.

The results clearly show the importance of the role to be played by the municipalities which have to build into their system the knowhow and competence of pollution control. It has to be appreciated that no significant improvement of the country's aquatic environment is possible as long as the cities continue to pour the waste waters into the natural water courses. In the absence of infrastructural facilities for collection, treatment and disposal of liquid and solid wastes, any efforts on the part of individual polluter will not make any headway, though it may fulfill legal obligations. In financial terms at the present cost of Rs. 1,200 for providing sewage to one person, the total expenditure can only be anticipated (actual cost will however depend on the size of the city). This reaches alarming proportions when we try to imagine the future population growth.

Industrial Effluents

Industrial effluents have become a source of water pollution at certain industrial centres The character and quantity of the wastes from different industries vary, depending on the nature of the products, raw materials and processes used and by-products recovered and the size of the plant. The overall impact of such effluents is conditioned by the nature of the water course and its surroundings. Effluents from no two industries are the same and even vary from factory to factory. India is poised for a significant industrial growth and in future the pollution load will increase manifold unless proper care is taken. An idea of waste water discharged by certain highly polluting industries are given in Table II.

Table II : Effluents produced by some industries in India

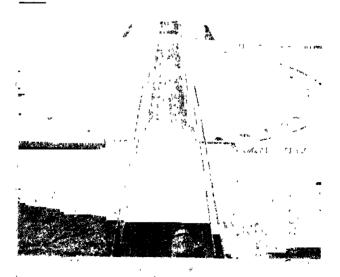
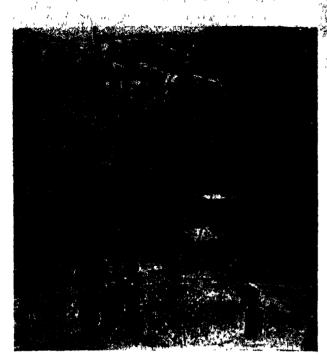
Industry	Volume of waste water/unit of product manufacture
Pulp & paper (kraft)	190,000—380,000 litres/tonnes of paper.
Straw board .	76,000 litres/tonnes of board
Fertilisers .	5,700—7,600 litres/tonnes of ammonia.
Distillery . .	5,100 litres/1,000 kg. of molasses
Tannery . .	2,400—3,300 litres/100 kg of hide.
Steel mills .	2,700—3,800 litres/tonnes of steel.
Refineries . .	1,350—1,700 litres/tonnes of oil processed
Cotton textiles .	12,600—37,800 litres/1,000 metres of cloth

A number of studies have been conducted by the scientists of the National Environmental Engineering Research Institute (NEERI), Nagpur, and the All India Institute of Hygiene and Public Health, Calcutta. Their studies have shown that all the important industrial towns are grossly suffering from water pollution problems due to industrial effluents. Such areas are around Bombay, specially around the sea and the creeks, the Calcutta-Asansol-Durgapur area, the polluted rivers being Hooghly and Damodar. Traces of cyanide have also been found in the Damodar. The Ganga, downstream of Kanpur, has also been found to be highly polluted. Water pollution problems in Delhi is a frequent phenomenon and the nation-wide jaundice epidemic of 1956 starting from Delhi cannot go out of people's memory.

Effluent discharge considerations have not been given serious thoughts in India in the location of industries. Under the Registration and Licensing of Industrial Undertakings Rules of 1952, an entrepreneur in his application to the Director General of Technical Development for seeking industrial licence, has to indicate as to how he proposes to ensure safe disposal of effluents and gases into air, water and soil. In the absence of any mechanism to examine the effectiveness of effluent disposal towards protection of the environment only academic importance is attached to it and mostly proper attention is not paid to this factor in granting of a licence.

Growing Importance of EIA

The decision whether to grant permission or not a project, depends in part upon the assessment which is made as to the extent, intensity and beneficial or adverse nature of such impacts. The basic issue of current situation is to identify the circumstances under which development proposals would give rise to need for Environmental Impact Analysis (EIA). Here the concept of a project should be distinguished from the vast majority of other development proposals since in a particular case it causes large-scale and complex environmental impact because of the nature of the proposal, the processes involved in its construction or operation and possibly because of its size where the scale of impact becomes important. In certain cases, quite small developments, because of the nature of emissions, can create very large impact. It is also necessary for the prospective project developer to know at the outset if his proposals are likely to necessitate an EIA.

Final clarifier of a private firm at Pune

Children bathing at a water-wheel in a village

With the growing importance of EIA, it becomes necessary to develop competence for drawing environmental impact statements, since no standard format can be drawn and impacts change from place to place and industry to industry. Side by side the competence to meaningfully analyse the statements should also be developed. Presently, the knowledge for special type of techniques involving many disciplines has not properly developed.

Control Boards

Positive step towards the control of water pollution was taken in India in 1974, when the Water (Prevention and Control of Pollution) Act was passed by the Parliament, "to provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water" and for establishment of boards for the prevention and control of water pollution with powers and functions to do work to achieve the defined aims The Act mandates a Centre-State campaign to prevent, control and abate water pollution on a national scale.

Consequent to the Act, the Central Board for Control and Prevention of Water Pollution was formed in September, 1974. Fifteen States have, under Articles 249 and 250 of the Constitution adopted the Act and have formed respective State Water Pollution Boards. The direct linkages between the two types of boards is made possible by nominating State board members as members of the Central Board. The Act also provides for formation of Joint Boards between neighbouring States or between a State and Union Territory (through the Central Board). The Act was amended in December, 1978 to extend its scope from "water pollution" to "environmental protection".

The main function of the Central Board is to promote cleanliness of water courses; to collect, compile and publish technical data; to prepare manuals, codes and guidelines, to promote inter-State cooperation in water pollution work and to advise the Central Government on matters relating to control of water pollution. Laying down or annulling of standards is an important role assigned to the Central Board. Functions of the State boards are also more or less similar to those of Central Board, except that their role in fixing of standards will not cover inter-State rivers.

The Act has given powers to the Central and State boards of inspection/entry of any premises to examine pollution abatement methods adopted by them. Also, the boards can prohibit certain types of activities if found deterimental to the environment. Under the Act, penalties in terms of imprisonment and fines can be imposed on offenders.

Problem of Standards

A major impediment for water pollution control in India is the absence of water quality standards suitable under different conditions. Tolerance limits for industrial effluents discharged into inland surface waters have been issued by the Indian Standards Institution. These standards have been mostly adopted from foreign sources, and in many cases overlook the socio-economic conditions prevalent in India. Secondly, the standards are to be modified suiting to the local conditions. Also, standards have to be such whose operation in pollution control should not be very expensive. In view of the difficulties mentioned above, the Central Board has adopted a scheme for zoning and classification of the Indian rivers, estuaries and coastal waters in collaboration with the State water pollution boards. As a first step, the Board has taken up the work of classifying the water reaches on the basis of the designed best use, and thereby develop standards based on water quality criteria on the ambient waters. Delineation of water quality on the basis of designated best use has been completed for the Jamuna from its source to Allahabad, and for the Kolak and the Daman-ganga in Gujarat. It should also be noted that there cannot be any permanent standards. This has to be flexible in every case so that they can be made more stringent with the growth of pollution sources at a site.

Monitoring of water quality in the country has been identified as one of the most important activities of the Central and State boards. Water quality moni-

The Water Balance

Without food, man can live for a few weeks. But without water, he cannot survive for more than a few days. Over 60 per cent of the human body is all water. It is distributed as 26.5 litres in the cells and 3.5 litres in the blood. The human body constantly looses water. The daily loss averages 2.5 litres—1.5 litres in urine, 500 ml perspiration, 400 ml respiration, 100 ml stools.

Roughly 2.5 litres of water must be taken daily to provide water balance in the body. For, a reduction of over 10 per cent is fatal. An average person, however, slakes his thirst by daily taking about 1.3 litres. The rest is supplemented by food. For example, fruit and vegetables are about 80 per cent water, and a biscuit is 5 per cent. Thus, food provides 850 ml daily. The remaining 350 ml is produced by metabolism.

toring data help to ascertain the nature and extent of pollution control measures necessary and whether or not such control measures are effectively maintained to progressively improve ambient water quality. Accordingly, a three-tier national grid for water quality monitoring will be established : (i) 40 at global level as a part of Global Environmental Monitoring System, (ii) 40 in collaboration with the State boards at the national level, and (iii) 120 at the State level.

In spite of having studied the water pollution problems and steps taken by the Government at different levels, people cannot be impressed by words alone There is no denying the fact that outbreak of water-borne diseases has become annual features in the country. There is hardly any part of the country from where reports of epidemics do not come. These are besides the slow poisoning to which pepole are exposed in the country about which reports are not available. Do we drink the "Adam's ale" or plain sewage ? Our resources are limited and there are pressing demand from other sectors. Secondly, we are beaten by the sheer numbers, the gigantic size of the problem. But priorities can surely change. Probably we can live with lesser number of festivities like film festivals, and give better water to people. □

Rural Water Supply

(*Continued from page* 9)

lake, river, spring, etc.) as the alternative source of drinking water. About their drinking water, the poor urged the need for regular|timely supply, adequate number|better management at the public points, provision for separate public ponds for the poor and increase in supply hours".

Main suggestions

Based on the findings of the study, the following suggestions emerge :

There is need to reinforce the criteria for the selection of the 'problem villages' and update the list urgently to enable the plan formulation on a more realistic basis

To ensure optimal utilisation of the facility of drinking water points, their location becomes very important. In this regard, it may be worthwhile to mention once again that although 93 per cent of the relevant respondents reported the availability of the drinking water points within a radius of half a kilometre, a sizeable proportion of them were not found to be taking benefit from such points or using them partly because they reported that these were 'at a distance', and were going in for open dug wells and individual collection as the alternative source.

The localities inhabited exclusively by the poor should be provided with the requisite number of drinking water points.

Due consideration may be given to the location of the drinking water points to ensure that the other available alternative sources are not used. Similarly, the undertanding of the caste structure in a village may prove useful in taking a decision for the location of the drinking water points.

Greater attention may be paid to the maintenance and repairs of the drinking water points particularly in the case of bored|tube/drilled wells with hand pumps. Ninety-two per cent of the respondents reported the availability of water through these sources as inadequate, gave 'frequent breakdown/out of order', as the main reason.

Extension education may be provided to the poor regarding the fact that water through the open dug wells without parapets and individual collection is basically 'unsafe' since it is subject to contamination. The existing mass media may prove useful in this regard. On the other hand, efforts should be made to convert the open dug wells into sanitary wells by providing parapets and making other provisions for eliminating contamination

Regular arrangements for monitoring of the scheme vis-a-vis benefits accruing to the poor may be made. This would ensure supply of drinking water on a co-ordinated and integrated basis. □

Toxic Chemical in Delhi Groundwater

Groundwater in Delhi, and parts of Haryana and U.P around the capital, contains cadmium concentrations, known to cause certain diseases. A study of cadmium level in groundwater reveals that the concentration is five times the mandatory limit of 0.01 *mg. per litre.*
Cardiovascular diseases, hypertension and "itai-itai" have been linked with the presence of cadmium in the body. Cadmium in cigarette smoke, industrial wastes and groundwater can be hazardous to human health.

This was revealed in a paper presented at the recent Indian Science Congress. It says that the conjunctive use of groundwater with surface water or the removal of cadmium by chemical processes is required before groundwater from the areas under investigation can be safely used for domestic purposes.

The study shows that at Kapashera, Bawana and Okhla, the cadmium concentration is 0.02 *mg per litre in groundwater and at Barwasni it is as high as* 0.05 *mg.*

FACT shows the wa" for Pollution Control

THE Udyogamandal plant of the Fertilisers And Chemicals Travancore Limited (FACT), the first big fertiliser factory in our country, was set up in 1944 on the Periyar river. The plant which went on stream in 1947, had many successive stages of expansion during the next 25 years.

Every chemical factory discharges some kinds of effluents. Fluorides, phosphates, dissolved or suspended solids, acids and alkali-bearing solutions, are the chemicals commonly found in the effluents of the Udyogamandal plants of the FACT.

Those were the days when neither the technology available to us was sufficiently advanced nor the general awareness on the need for prevention of pollution was high enough to have incorporated built-in devices for pollution control in the original designs of the plants. Later, however, awareness of the pollution problems was brought home to the management. Recognising the responsibility to the society, the FACT chalked out plans to remove the pollutants in the effluents, stric'ly following the standards laid down by the Kerala State Water Pollution Control Board.

The problem was tackled in two ways, a short term programme for immediate action and a long-term plan for permanent solution.

Efficient Treatment

Various types of effluent streams are combined together wherever possible, o that the toxic effect of acid c or alkaline nature is neutralised to the maximum possible extent. Acid or ammonia injections are also provided in the streams to control the pH (level of acidity or alkalinity) at suitable points.

Meanwhile, a comprehensive scheme was chalked out to solve the problem permanently. The complex nature of the pollutants and the lack of sufficient space were great constraints to the implementation of the effective pollution control measures. Therefore, it became necessary to study the control measures adopted in other fertiliser factories, and to conduct extensive experimental and developmental work before formulating an effective effluent treatment scheme.

The Engineering and Design Organisation of the FACT prepared an elaborate scheme after careful consideration of the various technical and economic factors. The project, with an estimated cost of Rs. 2 crore, was taken up for execution in right earnest and it is now in the final stage of completion. The annual recurring cost of the project is estimated to be over Rs. one crore.

Removal of Gypsum and Chalk

The scheme for the removal of carbon particles from the Texaco gasification plant efflluent stream and utilisation of the recovered carbon as fuel along with furnace oil is unique. It is for the first time in our country that such a recovery system is operated in the Texaco plant, using naphtha as the feed-stock. The technical knowhow and the design have been worked by FACT

The Texaco gasification plant lets out about 22 cubic metres per hour of carbon slurry containing 0.15 to 0.20 per cent carbon in the form of the fine particles. In the scheme adopted now, foul naptha containing carbon particles coming out of the decanter is mixed with furnace oil and distilled in a column with steam at a temperature of 120 degrees Centigrade. Naphtha gets evaporated and condensed in the overhead condenser. It is used for mixing with the incoming slurry from the generator. Carbon remains at the bottom of the column along with furnace oil. The foul furnace oil is cooled by heat exchange process with the fuel oil carbon slurry fed into the column. Then it is sent to the boiler plant and ammonium phosphate plant to be used as fuel. The bottom layer of the decanter is sent to a flash tank to remove traces of naphtha present in it and the water is reused.

This part of the integrated pollution control project had already been completed and it had a successful trial run during the last couple of months. The carbon recovery system was inaugurated recently.

Elimination of other pollutants

Effluents from the phosphoric acid, superphosphate and ammonium phosphate plants are mixed together, as all of them contain the common pollutants, fluorides and phosphates. About 350 cubic metres per hour of this effluent is pumped to a common tank and treated with lime in a flash mixer. Calcium phosphate and calcium fluoride are precipitated out. Fullers earth is also added as a coagulant. The reaction is allowed to complete. The products settle down and are removed as sludge from the clariflocculator. The sludge from the bottom of the clariflocculator is pumped to an open drying bed, where pebbles of various sizes and sand are used as filtering medium. The filtered liquor is recycled and the sludge is removed from the top. The treated effluent from the overflow of the clariflocculator, free from pollutants, is sent to the river after final pH correction.

The construction of this system has been completed and mechanical trial also is over. Final commissioning will take place soon.

Pollution control installation at FACT

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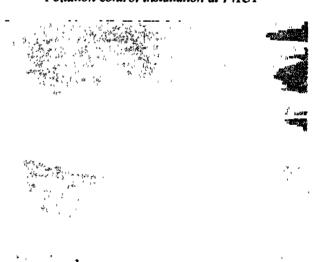

The by-product gypsum from the phosphoric acid plant is partially utilised for ammonium sulphate production and the rest of the gypsum cake is conveyed to a storage shed. Chalk, the other major solid waste, produced from the Merseberg process, is also conveyed to the storage shed. It has been proposed to remove these materials by mechanical means. For this purpose, a new conveying system is being erected and commissioned on a turnkey basis. Mechanical erection is over. It will be commissioned shortly.

The Udyogamandal division is also going ahead with an atmospheric pollution control scheme. The Rs. 2.44 crore project, likely to be commissioned by the year end is envisaged to bring down the sulphur dioxide and other problems connected with the gaseous fumes produced in the acid plants. The dust emanating from the rock phosphate grinding section has already been brought under control by the installation of the cyclonic water scrubbers ☐

World Water Resources

Is the world running out of water? This is the crux of the problem to be tackled on a global scale during the World Water Decade, beginning from January 1981. For, by 2000 AD the world population is anticipated to cross 700 crores, needing more water to produce food, to service the expanding industry and for domestic use. As a delegate warned at the 1977 UN Water Conference in Argentina, "the day is not distant when a drop of water will cost more than a drop of oil."

The world water resources, both fresh and saline, are fixed and finite. If it were represented by a 2.25 litre bottle, the quantity of the fresh water available would amout to a half-teaspoon. And all but a single droplet would have to be pumped out of the soil.

The total water available in the world is estimated at 140 crore cubic m., 97 per cent of which is highly saltish. The fresh water accounts for only 3 per cent. Of the latter, 77 per cent lies in the frozen wastelands, the Arctic and the Antarctic and the glaciers.

Thus, the human race is really surviving on the 23 per cent of the available 3 per cent fresh water. This 23 per cent is available in the form of groundwater (22 per cent), lakes and swamps (0.35 per cent), atmosphere (0.04 per cent) and rivers (0.01 per cent)

Farming is the largest consumer of water, using 80 per cent of it And 30 to 40 per cent of the world food production is dependent on irrigation One tonne of wheat requires about 1,000 tonnes of water and one tonne of rice, nearly 2,000 tonnes. The waste is no less colossal. The unlined canal system, it has been estimated, looses 20 to 30 per cent of water.

Only the fortunate fifth person in the world has the luxury of water on tap. For the remaining 80 per cent, procuring of drinking water is the daily grind for just survival. The New Yorker uses 1,045 litres a day, the Moscovite 600, the Parisian 500, the Londoner 263, and the Delhiwallah 227.

Now, then how long can our water last? Perhaps, till the solar system lasts? However, we are keeping our fingers crossed. But there is a terrible drain on our meagre water resources, what with the proliferating population, ever-changing weather conditions causing floods and droughts, colossal wastage and man-made pollution?

India's Domestic Water Need in 2000 AD

In 1971, India's population was 54.7 crore. By 2000 AD, according to the National Agriculture Commission projections, it is expected to hit the 94.5 crore mark. Of this, 27.8 crore would be in the urban areas. In 1972, the livestock population (including fowl) was 49.6 crore. By the turn of the century, it is estimated to go up to 62.2 crore.

Based on these projections, a paper presented at the 1975 World Congress on Water Resources, has estimated a three-fold increase in India's domestic water need in 25 years, from 10.30 lakh to 30.40 lakh hecto metres.

Need	1974	2000
Rural	4.7	10.20
Urban	4.1	10.46
Livestock	4.2	7.4

Youth on the March

SELF-HELP is the most rewarding. Another illustration of this has been given by the Nehru Yuvak Kendra at Pudukottai in Tamil Nadu. Within ten days 100 rural youth connected Nallammalsamudram, a hamlet, with the main road, by laying a kilometre long road. It was the exemplary outcome of a work camp organised by Nehru Yuvak Kendra.

Under the vocational programme of this Kendra, six tailoring centres, two palm-leaf training centres, one electrician's course and one pump set repairing course have been started. Tailoring, knitting and embroidering are being taught to the ladies, while house-wiring, electric appliances and pumpset repairing, etc. are taught to the men. The Kendra has been provided with necessary training material and instructors. The training centres will be converted later into cooperative production societies.

The Small Farmers' Development Agency, has also started similar training courses under its integrated Rural Development Programme on stipendary basis to the youngsters.

S. Perumal
Youth Coordinator, Pudukottai.

Impact of Water Pollution Control Measures in Maharashtra

G. H. Lalvani

MAHARASHTRAhas done pioneering work in respect of prevention, control and abatement of water pollution. Controlling water pollution and maintaining and improving the quality of water in the rivers, streams and in marine coastal areas are the responsibility of the Government. The State has also recognised and implemented the principle that the polluter must pay for the pollution. The Maharashtra Prevention of Water Pollution Act, came into force in May 1970 and was extended to the whole of Maharashtra. A Central Act for Prevention and Control of Water Pollution was introduced in 1974. Legislation for control of pollution was also introduced subsequently almost in all the States in India.

Maharashtra constituted a Water Pollution Prevention Board for implementing the provisions of the Act. The board consists of 13 members of whom there are four non-officials representing Bombay Municipal Corporation and municipal councils, and some environmentalists. The other nine members are officials from different departments and organisations of the Government All the members of the board are nominated by the State. The board has been given wide powers and its functions are :

First. to protect, maintain and improve the quality of streams for supply of water to the public, for preservation of animal, plant and aquatic life, and for domestic, commercial, industrial, agricultural, recreational and other legitimate uses.

G.H. Lalvani is Chairman, Maharashtra Prevention of Water Pollution Board, Bombay

Second, to plan a State-wide programme for the prevention, abatement and control of pollution of streams and for controlling the existing and new discharges.

Third, to issue permits and fix standards for affluents and for water quality.

Fourth, to inspect water, sewage and industrial effluent treatment works and plants and to review plans, specifications and other data relating to water treatment plants, purification works and disposal systems for issue of permits as required under the Act.

Fifth, to undertake, by agreement, capital works in regard to the treatment and disposal of trade and sewage effluent and waste jointly or severally with the local authorities or industrial undertakings. Similarly to maintain such capital works and raise funds required for them and their maintenance by contributions from the local authorities or industrial undertakings.

The board started with notification of the areas of different basins as Water Pollution Prevention Areas. In Maharashtra 19 such basins covering the entire State have been notified. The board has also classified different streams as fresh water or as saline water areas. The fresh and saline waters have been further classified according to the uses to which they are conventionally put, such as—for drinking, bathing recreation, fishing, navigation, salt pans, irrigation and so on.

The board has fixed standards for permissible concentrations of pollution matters in the effluent or municipal sewage before it could be admitted into the notified receiving waters. Once an area is declared as water pollution prevention area and notified as such, no industry or a local body is allowed to discharge the industrial or domestic waste water into any water course without the consent of the board. While granting "consents", the board imposes conditions for collection, treatment and disposal of the waste water in accordance with the standards prescribed by it. The standards for permissible concentration of pollution matters have been generally fixed on the basis of standards recommended by the ISI. The contravention of the consent conditions imposed by the board constitutes an offence and is punishable under the Act. The punishment may be either fine to the extent of Rs. 1,000 per day or imprisonment up to a maximum period of three months or both

Vigilance is an important function of the board. Implementation of control measures is watched through periodical monitoring of river waters as well as effluents from factories. During 1979, the field staff of the board collected about 8,000 water samples for analysis in the central laboratory of the board.

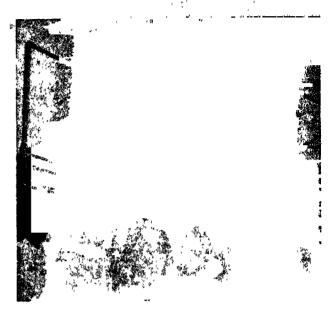
Impact of Control Measures

There are about 5,000 industrial units in the State which have been identified by the board as significant from the point of view of their pollution impact on the river waters or the marine coastal areas. During the last ten years, the board has inspected about 3,000 industrial units, and prescribed pollution concentration limits. The process of covering the remaining units is in progress. Thus, a legal relationship between the board and the industry has been established in these cases. About 2,500 industrial units are treating their effluents as per the limits prescribed by the board and the pollution of the waters has been controlled. In some water basins like the Ulhas river and the Krishna, more than 60 per cent of industrial effluents

is now being treated to prescribed standards. The board has now taken up the work of preparation of an inventory of the effluent treatment units of different industries and the technologies adopted by them to serve as a model for those who have not yet mobilised the resources for pollution control or have been hampered by other reasons in complying with the board's requirement. The board has prosecuted over 100 industrial units for non-compliance of consent conditions and secured convictions from courts against some of the defaulting units.

Since the industries in Bombay discharge their effluents in the sewers the board has not given high priority to control such effluents. The Bombay Municipal Corporation has indicated that in accordance with their World Bank financed project, it will take ten years to complete their plans for treatment of the city's sewage or its disposal in marine outfalls at a distance of three kilometers from the coast. The problems of pollution control in Maharashtra are further compounded by the concentration of the industry mostly in Greater Bombay and increasing concentration of population in the metropolitan region. Greater Bombay has been adding to its population by over ten lakh persons every decade. It rose from ten lakh at the turn of the century to about 80 lakh in the late seventies.

Although industry in Maharashtra has generally been responsive to the board's efforts for water pollution control, it has faced several difficulties in implementing plans and programmes for creating industrial wastes. The costs of treatment plants have been rising continuously due to the increasing complexity of treatment technology. It is estimated that cost of reducing 1 kg of B.O.D. in industrial wastes is approximately Rs. 2,500. Small scale industry has been finding it increasingly difficult to meet these costs. A recent survey of industrial estates in Maharashtra, conducted by the board, revealed that very few small-scale industries have provided for costs of waste water treatment in their plans for setting up the units. The survey also indicated the need for pre-planning of waste water treatment and pooled treatment of waste water of compatible industries with a view to effecting economy in such operations. While large-scale industries have undertaken responsibility for water treatment, it is necessary that corporations putting up industrial estates themselves undertake financial and organisational responsibility for such projects and distribute costs to participating units. The board is now being consulted by such agencies prior to setting up of industrial estates, so that plans for waste water treatment become in intrinsic part of the investment in such units.

Shortage of cement, difficulties with regard to supply of power and non-availability of sufficient land for carrying out projects of waste water treatment have often been cited by the industrialists as their main difficulty in complying with the requirements of the board. Many times these difficulties are genuine and the board has generally allowed such units sufficient time to overcome these difficulties. It may also be necessary to provide for cheap loans from public institutions to enable industrial units, particularly in the small-scale sector, to undertake construction of waste water treatment plants.

Inspection of the mercury effluents treatment plant

Considerable difficulty has been experienced by the municipal councils and municipal corporations in implementing plans and programmes for collection, treatment and disposal of domestic wastes. The finances of the local bodies do not permit of such expenditure on sewage disposal systems. The experience with respect to the local bodies has not been encouraging as in most cases they have no control over migration of the population from the rural areas to the urban areas and their sources of income are inelastic In such cases, it is absolutely essential to provide financial support at the State level in the form of grants and subsidies The municipal councils in the State have to provide only about 10 per cent of the cost of such works, while the balance is provided by the Government either in the form of loan or grant. In respect of Greater Bombay and the adjacent six municipal councils of Thane, Kalyan, Bhiwandi, Dombivli, Ulhasnagar and Ambarnath, a World Bank loan has been obtained for the purposes of scientific and hygienic disposal of sewage and for augmenting the water supply for these areas Similar action will be necessary to encourage the other municipal councils in the State to take up sewage disposal and sewage treatment on modern scientific lines

Water Greater than Food

Water, verily, is greater than food. Therefore, when there is not sufficient rain, living creatures sicken with the thought that food will be scarce. But when there is good rain, living creatures rejoice. . . .

It is water that assumes different forms of this earth, this atmosphere, this sky, the mountains, gods and men, beasts and birds, grass and trees, animals together with worms, flies and ants. Water indeed is all these forms.

—The Chhandogya Upanishad

Drinking Water For Villages

Ikbal Kaul

The availability of safe drinking water and sanitation measures have a direct bearing on the working conditions and health of the people and their capacity for fruitful production. There are very few other investments which repay as much in health benefit as the provision of safe drinking water and proper disposal of wastes is one of the (basic) control measures against the transmission of most water-borne diseases, which often constitute seventy per cent of the public health problems of our country. Besides, considerable man-hours are being daily wasted when people have to spend a good deal of their time in finding water for their daily needs.—Draft Sixth Plan

The Health Survey and Development Committee, which submitted its report in 1946, was the first of its kind to draw a pointed attention to the importance of the safe drinking water to the people It outlined a 35-year plan to provide potable water to all people. The Environmental Hygiene Committee recommended in 1949 a comprehensive plan to provide water and sanitation facilities for 90 per cent of the people within 40 years. It noted that "an adequate supply of wholesome water by acceptable quantity and standard should be considered first among the improved health services that the community needs. But practical steps taken in this regard are very disappointing."

The National Water Supply and Sanitation Committee, constituted in 1960-61, made an assessment of the magnitude of the existing water supply problem in the country. Besides elaborating on the recommendations made by the earlier committees, it suggested notable procedural, organisational and financial reforms. The States, it emphasised, were not geared to carry out the water supply and sanitation programmes. They lacked the organisational set-up for handling the rural drinking water schemes, and a plethora of agencies was entrusted with this phase A nation-wide drinking water programmes, it estimated, would need a minimum amount of Rs. 1,500 crore.

Water Board's Demise

In 1963, the Union Health Ministry appointed the Drinking Water Board. In its interim report, the board recommended the highest priority to the provision of water supply in the difficult and scarcity areas and completion of this phase of the programme within a period of five year We do not know whatever happened to the board; it quitely went into oblivion. The all-India seminar on financing and management of water works and sewerage, convened by the Union Health Ministry in 1964, recommended that the provision of drinking water and sewerage should be accorded a very high priority in the nation-building programmes. It also recommended the setting up of statutory water and sewerage boards in the States, and a Central municipal finance corporation so as to increase the efficiency of financing and operating municipal water supply and sewerage services.

The real efforts in tackling the problem of drinking water, particularly in the rural areas, were made with the advent of planning. In the initial stages of the First Plan (1951-56), allocations for water supply and sanitation schemes in the States were made under the Community Development Programme and Local Development Works. There was, however, no Central direction provided in the matter But in 1954 the Union Government initiated the National Water Supply and Sanitation Programme as part of the health schemes under the First Plan, and made specific provisions to assist the States in the implementation of their urban and rural water supply and sanitation schemes. Approved rural schemes, limited to population units not exceeding 5,000, were given 50 per cent grant-in-aid by the Centre.

Under the Community Development Programme, the total expenditure in all health schemes, including water supply, was about 4.5 crore About 1,07,000 wells were constructed or renovated under the programme The expenditure under Local Development Works Programme was Rs. 7 25 crore, and 29,650 wells were constructed or renovated.

Second Plan

The total expenditure on the rural water schemes in the Second Plan (1956-61) was Rs. 32.5 crore; Rs. 18 crore under the National Water Supply and Sanitation Programme, Rs 11.5 crore under the Community Development Programme and 1.3 crore under the Local Development Works Programme. An estimated 5,55,050 wells were constructed or renovated Besides, about Rs. 3 crore were spent under the Welfare of Backward Classes Programme under which about 20,000 wells were estimated to have been built or renovated.

Third Plan

An important objective of the Third Plan (1961-66) was to supply good drinking water to as large an extent as possible by the end of the plan. It was realised that it was a difficult aim to achieve, and called for intensive effort and effective coordination between all the agencies concerned in carrying out the programme. The plan provided about Rs. 67 crore for rural water supply under different programmes.

This included Rs. 16 crore under the State Plans, about Rs. 12 to 13 crore under the Community Development Programme, and about Rs. 3 to 4 crore under the Backward Classes Welfare Programme.

During the three annual plans, following the Third Plan, 478 rural water supply schemes, at an estimated cost of Rs. 21 crore, were undertaken. Thus, by the end of 1968-69, it is estimated, 12 lakh wells and hand-pumps were constructed or renovated.

Fourth Plan

For the Fourth Plan (1969-74), it was envisaged that the bulk of the provision under rural water supply and sanitation schemes would be utilised in areas of acute scarcity and that other scarcity areas would meet their needs from programmes for Community Development and Welfare of Backward Classes or through local efforts. The provision for rural water supply was Rs. 131 crore.

Accelerated Rural Water Scheme

In 1972-73, the last two years of the Fourth Plan, the new Central Accelerated Rural Water Programme was introduced to deal with the problem of water supply in difficult areas. The scheme gave a real fillip to the provision of drinking water in difficult areas. Under it hundred per cent assistance was given to the States and Union Territories for extending water supply to such villages where the problem was most acute. The financial assistance under it was about Rs. 29 crore. As a result of the efforts during the Fourth Plan and earlier plans, about 36,000 difficult villages were provided with drinking water.

Fifth Plan

In the Fifth Plan (1974-78), the rural water supply was brought under the purview of the Minimum Needs Programme, and outlays were especially made for water supply in problem and difficult villages. The revised Fifth Plan outlay was Rs. 381.24 crore, inclusive of Rs. 157.87 crore under the Minimum Needs Programme. By the end of the Fifth Plan 64,000 problem villages, covering 10 per cent of the rural population, were availing of the protected drinking water facility. During 1977-78, over 5,430 villages were covered under the revived Accelerated Rural Water Programme with an outlay of Rs. 38 crore. Under the Minimum Needs Programme, 7,439 villages were covered with an outlay of Rs. 84 crore. About 29,000 villages were covered with an outlay of Rs. 278.35 during the Plan.

Strategy For the Sixth Plan

The strategy for the Sixth Plan (1978-83) has been spelled out in the draft document "It has been felt that much larger efforts would be called for if the rural water supply problem is to be adequately tackled. Hence, the increased outlay envisaged in the Draft Sixth Plan has been nearly doubled. As against a total of Rs. 765 crore spent during the Fifth Plan (1974-78), an outlay of Rs. 2,711 crore is envisaged for the Sixth Plan (for urban and rural schemes). The emphasis is considerably greater in respect of the rural water supply. For this purpose, as against Rs. 637 crore spent over the last 27 years, the Sixth Plan proposes an outlay of Rs. 1,458 crore, which is more than twice the expenditure in the five plans put together."

Expenditure on Rural Water Supply

	(Rs. crore)
First Plan (1951-56)	3
Second Plan (1956-61)	30
Third Plan (1961-66) and three Annual Plans, 1966-69	48
Fourth Plan (1969-74)	208
Fifth Plan (1974-78)	348
Sixth Plan (1978-83) :	
States	1,312
Central	326

Low-cost Solutions

The Sixth Plan draft stressed the importance of the low-cost solutions and proper maintenance of the rural water schemes already executed or planned. "The approach should be one well for one village," the draft Plan empahsises, "so that the villages are assured of a definite source of water supply. However, additiona sources may be considered in areas where the size of population so warrants. All efforts should be made to adopt low-cost solutions. Sanitary wells properly designed with parapets may be taken up, wherever possible, if the quality of water is good. Ordinary or drilled tubewells, wherever possible, are also low-cost solutions which are in a way preferable, provided there is efficient arrangement for maintenance. Only when these are not possible, piped water supply schemes should be resorted to and in these also groundwater or gravity source should be preferred and arrangement for effective maintenance made."

It has further "proposed to strengthen suitably and adequately technical machinery to look after the proper execution and maintenance of the schemes. Community involvement, however, is absolutely essential, right from the formulation, execution and maintenance of the water supply schemes. Considerable amount of pilferage and wastage of water could be avoided by local involvement and cooperation."

Besides, the draft Plan has called for the equal access of the drinking water sources for the weaker sections of the society, like the Scheduled Castes and Tribes and the landless farm labour. "In this context, the location of the safe drinking water points becomes important. According to a recent study, it has been noticed that the share of the 'poor' in the safe drinking water facility was less as compared to the 'non-poor'. This calls for greater attention in the matter of selection of location of the water points."

International Assistance

The UNICEF has provided aid in the shape of drilling rigs, accessories, spares for tapping groundwater resources in hard rock formations, and rural areas. Besides, it has also provided consultancy services. The rigs, accessories, etc., were supplied free of charge, and the beneficiary States incurred only handling and maintenance charges. The UNICEF has given US $ 6.06 crore during the Fifth Plan. The aid has been particularly useful in the hill regions. A number of hand-pumps have been installed by the UNICEF, which are maintained by the States. A three-tier system has been established in some of the States for effective maintenance of hand-pumps that have been installed under this programme.

The WHO has provided assistance by way of experts, fellowships and supplies and equipment. Environmental pollution control and water supply were the main fields in which the WHO assistance was utilised. Facilities were also made available for a number of WHO fellows coming from the countries of the South-East Asia and the Middle East for field studies in pollution control problems and water supply programmes.

1.52 Lakh Problem Villages

A survey conducted by the Union Government in 1972 revealed that over 1.52 lakh villages were bristling with grave problems in regard to drinking water. Over 90,650 villages did not have water available within a depth of 15 metres, or within a distance of 1.6 km. The population of these villages was 7.48 crore. Such villages were dotting all the States, the largest concentration of 14,234 villages being in UP.

In 24,778 villages, water was unsafe due to the presence of such chemicals as iron, chlorides, fluorides and other toxic elements. These villages were located in Andhra, Assam, Gujarat, Kerala, Meghalaya, Punjab, Tripura, Tamil Nadu, UP, Manipur, West Bengal and Goa, Daman and Diu. West Bengal had the largest number of such villages, viz., 11,551. The total population of these villages was 2.19 crore.

The water sources of 33,857 villages were endemic to water-borne diseases, like cholera, etc. These villages were located in Andhra, Assam, Bihar, Haryana, Karnataka, MP, Maharashtra, Meghalaya, Orissa and Tamil Nadu. The largest number was in Bihar—25,000 villages. The population affected was 2.41 crore.

Dreaded Disease

The dreaded guinea worm infested the water sources of 3,184 villages. There were located in Andhra, Assam, Karnataka, MP, Orissa and Tamil Nadu. The biggest concentration was in Madhya Pradesh, viz., 2,839 villages. The total affected population was 18.43 lakh.

According to the Draft Sixth Plan, 57,818 problem villages were estimated to have been provided with drinking water by March 1978, leaving 94,978 difficult villages to be covered. But the States represented to the Union Government that the 1972 survey did not correctly indicate the actual number of the difficult villages. Also, due to continuous drought in some areas, the water table had gone down or the water sources had dried up Thus, the number of problem villages had gone up. "According to the figures now made available by the State Governments", the Draft Sixth Plan said, "the number of these villages will be about 1.45 lakh at the end of 1977-78." It is necessary that the situation is correctly assessed so that a realistic plan could be drawn up During the Sixth Plan, an additional 28,000 problem villages, subsequently identified as such and conforming to the criteria of the difficult villages, would be covered.

State-wise Progress

The progress achieved in various States regarding the supply of drinking water to the villages is detailed below.

Andhra Pradesh : About 67 per cent of the State does not have adequate and assured water sources. The Rayalaseema region is notorious for droughts. The drinking water in the villages is supplied through open wells, bore-wells and the Panchayat water supply schemes. The total number of the villages in Andhra Pradesh is 63,801. By the end of the Fourth Plan, 42,059 villages and hamlets were provided with drinking water. During the first three years of the Fifth Plan, another 6,700 villages were covered. About 2,610 problem villages, with a population of 34.81 lakh remained to be covered on April 1, 1978. The expenditure on the rural water schemes was around Rs. 10.53 crore.

Assam : According to the 1972 survey, 25 per cent of its about 22,000 villages did not have adequate and safe water facility. The drinking water problem in the State was compounded by the presence of chemicals in the top layers of the water. In the hills, the water-bearing strata varies in depth from 9 to 90 metres. By 1978, 6,700 problem villages, with a population of 33.81 lakh, remained to be covered.

Cholera-Endemic Villages

Bihar : Its southern region is highly prone to dorught. However, the drought and famine of 1967 gave a boost to the construction of wells. Of its 67,500 villages, 18,050 villages, falling in the problem category, were without adequate safe drinking water facility in 1978. The population affected was 61.10 lakh. According to the 1972 survey, the water sources of 25,000 villages of the State were endemic to water-borne diseases, like cholera. This is the largest number of such villages, the all-India figure being 33,857. During the three financial years, from 1974 to 1977, 5,968 hand-pumps and 3,067 ring-wells were constructed in the State. It was also proposed to complete 579 rural water schemes in villages with no water sources, or where sources were contaminated with cholera germs, or where the water had a high iron content.

Gujarat : One-third of the State, which has 18,700 villages, is prone to drought. There are no perennial rivers in the State, except the Narmada and the Tapti. Thus, Gujarat is poorly endowed with water resources. By 1978, 1,953 problem villages remained to be covered with safe drinking water. Their population was 17.59 lakh.

Ambitious Haryana Scheme

Haryana : Till recently, adequate and safe drinking water was not available in 5,900 villages, out of the State's 6,700 villages. However, by 1978, 3,233 villages, with a population of 41.21 lakh, remained to be covered. By the end of the Fifth Plan, 326 villages were expected to be provided with drinking water facilities, at a cost of Rs. 6 crore. A scheme costing Rs. 138.16 crore has been framed to cover 3,213 villages of the State falling under the scarcity areas.

Himachal Pradesh : The people have to fetch water from long distances and over difficult terrain. By 1978, over 10,240 of its 17,000 villages were in the problem category in respect of drinking water. The population of these villages was 17.42 lakh. The villages are widely scattered and have a low population density.

Jammu & Kashmir : Much progress has not been made in the rural water programmes. This is in sharp contrast to the urban drinking water supply programmes. Of its 6,600 villages, 3,191 villages remained to be covered by safe drinking water schemes in 1978. The population of these villages was 22.78 lakh.

Karnataka : Of its 19 districts, vast areas in as many as 12 are prone to drought. But being a forward-looking State, it had recognised very early the importance of supplying safe drinking water to its people, both in the rural and urban areas. Of its 27,000 villages, 4,309 remained to be covered with the safe drinking water in 1978.

Kerala : The Fifth Plan outlay for the rural water schemes was Rs. 12.47 crore. The target was 82 spill-

over schemes for the Accelerated Rural Water Programme, supply of drinking water to 74 Panchayats, falling under the category of scarcity and difficult areas, and three comprehensive rural water supply schemes, covering a group of Panchayats. By 1978, 465 problem villages, with a population of 65.24 lakh, remained to be provided with safe drinking water.

Madhya Pradesh : Over one-fifth of its 71,000 villages were falling in the category of the problem villages, according to the 1972 survey. However, by 1978, only 7,292 problem villages remained to be covered with potable water The population of these villages was 21.41 lakh

Water For the Landless

Maharashtra : Over one-fourth of the State is prone to drought. In the early 'seventies, half of its over 35,000 villages were suffering from the drinking water problem. By 1978, the number of such villages was 3,872, having a population of 64.36 lakh. The financial outlay during the Fifth Plan was Rs. 43.32 crore. An amount of Rs. 9.08 crore was provided in 1977-78 for 1,638 rural water schemes. Work on 3,358 wells was expected to be completed by the end of 1977-78. A sum of Rs. 11 lakh was also provided for the wells in the new Bastis of the landless labourers.

Meghalaya : In 1978, the number of problem villages remaining without safe drinking water was 3,185, with a population of 4.72 lakh. The Fifth Plan provided Rs. 5 crore for the rural water schemes. By the end of March 1977, about 25 per cent of the rural population was supplied with the safe drinking water. Forty-seven water supply schemes were completed by December 1976. During the next two years, over 55 rural water schemes were proposed to be taken up.

Orissa : It is one of the States the rural water resources of which are laden with diseases germs, like cholera. The State is also seasonally affected by droughts and floods. In 1978, of its 51,000 villages, 1,721, with a population of 10.14 lakh, remained uncovered with potable water supply.

Punjab : Over one-fifth of its villages have the problem of inadequate drinking water. By 1978, 981 problem villages were to be covered with the safe drinking water. Since the First Plan, 2,058 rural water supply schemes have been sanctioned in the Punjab, with a total outlay of Rs. 22.38 crore These schemes have covered 11.66 lakh people During the Fifth Plan, the water schemes for 138 villages were sanctioned. By the end of October 1976, Rs 2.02 crore were spent on providing safe drinking water to 75 villages. Over 54,000 people in the villages benefited during the first three years of the Fifth Plan

Disease Infested Water

Rajasthan : Drought and desert are synonymous with the State. Over one-third of its area isprone to drought. It has the lowest rainfall in the country—13 cm in the Thar desert. Groundwater is struck at 15 to 60 metres. By 1978, 3,122 problem villages, with a population of 16.82 lakh, were left without safe drinking water facility. A survey, recently conducted by the State, has revealed that out of 33,305 villages, 24,307 were the problem villages. Of these, 10 419 villages had no assured water supply and largely depended on the accumulated rain water. In 13,610 villages water was unfit for human consumption. Water in 3,880 villages was affected by water-borne diseases, like cholera and guinea worms. In 9,730 villages, the water sources were affected by excessive salinity, fluorides and iron.

During the Fifth Plan, 3,331 villages were provided with safe drinking water. In 1978-79, about 300 villages were covered with piped water supply schemes, 150 villages under the accelerated rural water programme and 75 villages under the protected water supply schemes. In the last financial year, the State allocated Rs. 20.61 crore for providing water to 600 villages.

Tamil Nadu : The rural population of the State is 2.56 crore, living in 58,595 villages. Of these, 18,960 have been identified as the problem villages. In 2,230 villages, the water sources are endemic to cholera, or infested with guinea worms, or the iron and fluoride content is above the permissible limits. The potable water sources of 4,916 villages are beyond 1.6 km, or where the water level is over 1.6 metres below ground The rest of the 11,814 villages have inadequate drinking water sources.

Owing to a successive failure of the monsoons, the State suffered a servere drought in 1976-77, and a crash programme of providing drinking water to 8,200 drought-affected villages was taken up and completed From 1971 to 1977, 16,117 villages were provided with the drinking water facilities, at an expenditure of Rs. 22.24 crore. This has benefited over 95 lakh people. The Fifth Plan provided Rs. 25 crore for the rural drinking water schemes. In 1978, the number of the problem villages still to be covered with safe drinking water was 1,402.

Three-Tier System

Uttar Pradesh : It has been assessed that 35,506 villages, out of over 1.12 lakh villages in the State, are beset with the drinking water problem. Most of these villages are located in 20 districts, of which eight are in the hills. By the end of the Fifth Plan, 6,750 such problem villages, along with 2,250 others in close proximity, were slated to be covered with piped water supply. However, a study in 1978 revealed that only 5,050 problem villages had been provided with drinking water

To quicken the pace of the drinking water supply programme, both in rural and urban areas of the State, the drinking water supply organisation in the State was restructured in 1975 A two-tier system was set up under the advice of the World Bank. At the apex is the UP Jal Nigam. Three Regional Jal Sansthans were established at Kumaon, Garhwal and Bundelkhand. Five Jal Sansthans were set up at Kanpur, Agra, Varanasi, Allahabad and Lucknow.

West Bengal : Of the 54,920 villages, with a rural population of 3.33 crore, only 20,451 villages and hamlets have arrangements for drinking water. Over 19,000 villages have no such facility. At present, the programme is to provide at least one source of drinking water for every 300 persons. Piped water has already been supplied to 406 villages and work on the schemes for 622 villages was in progress during 1978-79.

To solve the problem of drinking water supply in the rural West Bengal, several programmes for water supply schemes and sinking of hand-operated tube-wells have already been taken up. The rural water supply problems in the State can be solved by utilising the rivers as sources of supply. In some rivers, particularly in the western part of the State, the subsurface flow exists in the sandy beds in all seasons, when the surface flow disappears during the lean periods. This subsurface flow, needing no filtration, can be tapped through big diameter tube-wells or an infiltration gallery with disinfestation. In other areas, particularly the rocky regions, where water contains iron, it is necessary to instal iron elimination plants.

Rural Poverty: Causes and Cures

Francis Cherunilam

ACCORDING to the World Bank's *World Development Report* 1978, about 800 million people in the developing world still live in "absolute poverty" which is defined by the Bank President Robert S. McNamara as "a condition of life so characterised by malnutrition, illiteracy, disease, high infant mortality, and low life expectancy as to be beneath any reasonable definition of human decency". Even according to the Bank's optimistic estimates, the number of people in absolute poverty would be 60 crore even at the end of the present century. In the year 2000, about 27 per cent of the population of the low income countries i.e., countries with an annual income per person upto US $ 250, would be in absolute poverty as against over 50 per cent now.

Despite the fact that many of the developing countries have been experiencing with planned development for decades now, they could not make a major dent on poverty. India's Fifth Plan Approach Paper stated that "the absolute number of people below the poverty line today is just as large as it was two decades ago". According to the Draft Five Year Plan 1978—83, over 46 per cent of India's population falls below the poverty line. Thus, in India, the absolute number of persons below the poverty line increased from 22 crore on the eve of the Fifth Plan to 29 crore on the eve of the Sixth plan—nearly 32 per cent increase in absolute numbers. The Draft Plan projections indicate that in 1982-83 the proportion of poulation below the line of poverty would be about 38 per cent and in 1987-88 about 27 per cent. The absolute number would come to around 26.5 crore and 20.5 crore respectively.

As the World Bank publication points out, the majority of the world's poor are among the people *who reside in the rural areas of South-East Asia.* It is true that the problem of poverty and destitution is severe in the urban sector too. But the fact is that, as the Fifth Plan Approach Paper remarks, "the urban

Francis Cherunilam, is with the Department of Post-Graduate Studies and Research in Economics, University of Mysore.

poor, to a large extent, are an overflow of the rural poor". Dandekar and Rath in their famous study *Poverty in India* have pointed out that the deepening of the urban poverty "is the consequence of the continuous migration of the rural poor into the urban areas in search of a livelihood, their failure to find adequate means to support themselves there and the resulting growth of roadside and slum life in cities. All the latent dissatisfaction about the slow progress of the economy and the silent frustration about its failure to give the poor a fair deal, let alone special attention, appear to be gathering in this form. Its shape today is no more than hideous, allowed to grow unheeded and unrelieved, it will inevitably turn ugly".

Unemployment Problem

The aggravation of the problem of unemployment (including underemployment) and the concomitant poverty is the inevitable result of the wrong development strategy followed by the developing economies. As Professor B. R. Shenoy remarks, the fatal error of policy makers in India, in common with their counterparts in many underdeveloped countries has been to identify basic industries wrongly. The true basic industries are those which yield the highest output and maximum employment at current wage rate. They are not the same set of industries for all time and in all countries. Obviously, agriculture should have been treated as the basic industry in our planning. But alas !, as Michael Lipton comments, "a paradox lies at the heart of Indian agriculture. Few resources are allocated to it ; rightly, it set ambitious targets ; demonstrably, the resources are not very likely to reach the targets ; yet the potential yield from extra resources is high". Despite the warning by the IMF as early as 1950 that "it should not be assumed that an excessive concentration of development in industrial field is in the interest of the underdeveloped countries", most of the developing countries seem to have thought that industrialisation rather than the development of agriculture was the easiest means to reach the end. But the experience has been disappointing even in the case of the countries which have recorded high rates of growth. For instance, most of the Latin American countries had average growth rates between 5 and 8 per cent per annum for the last quarter of a century, "And yet the problem of growing chronic unemployment, widening disparities of income, and runaway unplanned urbanisation are now nowhere more evident than on that continent". The 1971 Census statistics indicate that despite the large chunk of money invested in the industrial and allied sectors of India, since the commencement of the planned development, agriculture continues to be the resort of as large a segment of the population as in the beginning of the century. In 1971, the labour force employed in the agriculture stood at 73.8 per cent of the total, compared to 73.1 per cent in 1921 and 72.8 per cent in 1951. Between 1971 and 1978, when the labour force increased by 35 million, non-agricultural activities absorbed only 9 million, about half in the organised sector and half in the informal sector. The general pattern of manpower deployment in the country is that only 10 to 11 per cent of the increase in the labour force finds employment in the organised sector while the rest drifts into part-time employment in the rural areas or the informal sector of the urban industry and trade, or becomes chronically unemployed. All these clearly show that the employment opportunities in the non-agricultural sector have not been expanding commensurate with the investment expansion so as to bring about a structural change in the economy to justify the investment strategy and pattern of development. The modern industrial sector of the vast majority of the capital deficient-labour surplus-less developed economies has been built mostly with the capital intensive technologies designed for the rich high wage economies. The inevitable outcome of this has been exposed by India's former Minister of State for Industry Smt. Abha Maiti : "The rate of labour absorption is so small that even if this absorption is miraculously doubled by a phenominal growth in large scale industry and public services it would still not employ more than 20 per cent of the annual increase in our labour force". Between 1961 and 1976, investment in the modern factory sector of India increased by 139 per cent and output 161 per cent but employment increased, only 71 per cent. Therefore employment per unit of gross output decreased by 34 per cent and employment per unit of capital declined by 28 per cent. In Latin America, between 1960-69 the rate of growth in manufacturing employment was only 40 per cent of the output for the sector. This is true of most of the developing countries ; available statistics in respect of different countries show a consistent lag, by varying amounts. Evidently, the large scale capital intensive industrialisation cannot eradicate unemployment and poverty. It is the realisation of this stark reality about starvation that made the World Bank suggest that in poor economies "poverty alleviation depends overwhelmingly on increasing agricultural productivity to raise the purchasing power of the small and marginal farmers and to create employment for the landless at higher wages".

Neglect of Agriculture

It is because of the relative neglect of agriculture in the eagerness to foster industrialisation, based mainly on highly capital consuming heavy and mother goods industries, that most of the developing economies could not make a major dent on rural (and consequently urban) poverty. The neglect of the agriculture was partly the result of the failure of the Development Economists and Planners to realise the tremendous potential of this sector to increase labour input and agricultural output and the consequent assignment of a wrong role to the agriculture in the process of economic growth. The fatal error was that the agricultural sector was looked upon as a source for the exploitation of surpluses marketable surplus, taxes and labour surplus rather than a potential source of development and employment. Instead of augmenting the resources for the development of agriculture itself which offered the easy and quick solution to the problem of unemployment and poverty, they muddled their head to mobilise resources from the agriculture to be diverted to the development of other sectors. The inevitable result is that the development strategy could neither make a dent on rural unemployment and poverty nor provide sufficient productive employment outside the agriculture.

Agriculture is the sector that has the highest potential for employment and at the same time increase output in the short span of time. In other words, for a given amount of capital the agriculture can provide the maximum employment as well as output and the gestation is minimum. For instance, "expert studies have shown that, in India, an investment of Rs 1 crore of capital in agriculture adds to output Rs. 57 to Rs. 69 lakh annually, in iron and steel Rs. 19 lakhs

and in textile Rs. 36 lakh. The inference is that Indian economic development will take place several times faster than has been the case if only we reversed the order of priorities in our investment policies, i.e., gave high preference to agriculture". Further, "it has been estimated that an investment of Rs. 1 crore in heavy industry i.e., industries producing machines would provide employment for 500 persons, for 1,150 persons in large industries producing consumer goods, and for 4,000 persons if invested in agriculture."

The agricultural sector can make a significant contribution towards achieving the goal of removal of unemployment and eradication of poverty by tapping the irrigation potential and the cultivation of the HYVs. Extension of irrigation facilities can, apart from increasing the agricultural productivity and output, tremendously increases the labour absorption capacity of the agriculture. In a carefully conducted survey of small farmers, Dr. Gotsch of Harvard, showed that "dry farming could occupy 700 to 800 man hours per hectare per year whereas a tube-well raises potential labour requirements to 1070 man hours; and also increase the wage which a farmer could afford to pay". Data collected from all over India show "that on an average irrigation increases employment in agriculture by 40 mandays per hectare". Aside from generating additional opportunities of employment, the input expansion in agriculture can bring about a substantial output increase. The World Bank reveals that "with water available at the right time and increased use of high yielding seeds and nutrients, yields that are 20 to 120 per cent higher are possible under irrigated conditions depending upon the crop and variety sown". Thus the input expansion in the agricultural sector can substantially help solve the twin problems of unemployment and poverty. A development pattern of this type is of prime importance to countries like India where the consumption levels of a vast segment of the population are very low. A step up in the consumption levels of the large number of people now below the subsistence level requires a considerable increase in the demand for and supply of agricultural commodities and other wage goods As one of the most direct and visible consequences of poverty is malnutrition, any measures designed to increase productivity, especially of food crop cultivation on small farms, are likely to have a major and direct impact on nutrition. The marginal propensity to consume food out of production, according to the World Bank Staff working paper, is in the range of 0 75 to 0 9 in most cases.

Investment and Production Programme

The Draft Sixth Five Year Plan envisages an investment and production programme by which the expansion in the labour force of 30 million in the period 1978 to 83 as well as a substantial part of the backlog of unemployment can be absorbed. Of the total 49.26 million man-years of employment opportunities that have been estimated to be created during the plan period, 22.77 million is the share of agriculture and allied activities. Thus, the employment objective depends crucially on increased labour absorption in agriculture and allied activities. This means increasing the productivity of available land through irrigation, multiple cropping and improved technology. The main thrust of the planning strategy, therefore should be to expand the area under irrigation as rapidly as possible, and to develop cropping patterns and agricultural practices which optimise the use of land and water resources.

Improved productivity and employment intensity can be achieved not merely in the roduction of cereals and cash crops but in animal husbandry, horticulture, forestry and fisheries where scope for expansion is even greater. A marked increase in agricultural employment should lead to significant growth in secondary employment in rural areas in distribution and transport and in tertiary employment in other economic activities generated by the growth in rural income. The World Bank Paper says that the non-farm activities in rural areas is a Primary source of employment and earnings for approximately one-third of the rural labour force in most of the LDCs and are a significant source of Secondary earnings, especially in the slack season.

Ancillary Agricultural Activities

The non-farm activities are widely spread and diverse ; ancillary agricultural activities are the most important along with commerce, services, transport, processing and manufacturing (mostly on a very small scale). The main market for these activities are those generated by the growth of original and rural incomes themselves. Further, it takes a certain level of continuous and cumulative growth in agricultural incomes to generate a sustained growth rate in non-farm employment and income opportunities The evidence from the Republic of China, the Republic of Korea, Japan and the Indian Punjab suggests that annual agricultural growth of about 4 per cent to 5 per cent cumulatively for four to five years is needed to achieve any reasonable rate of growth (2 per cent—5 per cent) in non-farm employment and incomes.

Agriculture's Dominant Role

In sum, the agriculture, which has tremendous input and output potentials should be assigned a dominant role in the programme to alleviate poverty. Of course, we need large scale industries in certain areas. But the fact remains that there is a lot of scope for the decentralisation and wider dispersal of industries. As Jagadesh Bhagavathi suggests, a country like India "should create more jobs to absorb the enormous reserve of unemployed and underemployed labour in rural areas. This clearly supports the focus on agriculture, not just for the sake of growth but in the hope that rural people can experience economic growth better if they stay there on the farm than if they migrate to the cities in search of jobs" There are countries like China, Taiwan, the United States, Tanzania, Cuba and Newzealand which have made concerted effort to improve both the productive capacity and living conditions in the countryside and have derived broad social benefits from it. There is, obviously, no common bond of geography, political system or culture among these countries. What is need is a clear understanding of the problems in their right perspective and a strong determination and true dedication. India can learn lessons from the experience of the above mentioned countries. The Indian culture is predominantly agricultural and the solution for her problems lies mostly in the development of the agriculture accompanied by the development of a highly decentralised and widely dispersed industrial sector with the application of the "appropriate" technology".

Industrial Finance In India: Role of Industrial Development Bank

Dr. P. Narayanan

INDIA has built up a fairly good net-work of term-financing institutions to cater to the needs of the industrial sector. The emergence of these institutions and the course of their development in regard to lending policy and practices as well as to other functions and inter-institutional relationships reflected, and were in response to, the changing situation. This evolution of development banking in the country is by no means complete; it will continue and take the course appropriate to the industrial growth in the country.

At the apex of the industrial financial institutions in India now stands the Industrial Development Bank of India. The main roles of the Bank, apart from the provision of assistance to large concerns, include the co-ordination of the activities of all the term-lending institutions and the strengthening resources of the other institutions. Set up in 1964 as a wholly-owned subsidiary of the Reserve Bank of India, the Bank was delinked therefrom in August, 1975 to meet the criticism about the alleged imposition of policy and undue intereference in day-to-day business by the RBI. The other all India institutions—the Industrial Finance Corporation of India (IFCI), established in 1948 to provide term-finance to medium and large sized industrial projects and the Industrial Credit and Investment Corporation of India (ICICI), set up in 1955 with foreign participation under the aegis of the World Bank for assisting industrial enterprises in the private sector particularly with foreign currency loans—are also actively in the field. The former is now a 50 per cent subsidiary of IDBI and the latter is wholly privately owned. Another all-India institution, the Industrial Reconstruction Corporation of India (IRCI), which was set up in 1971 specifically for the reconstruction of sick and closed units particularly in West Bengal, also continues to function but its importance is largely local. At the State level, there are State Financial Corporations (SFCs) in which the State Governments and the IDBI between them hold the majority of shares. They are intended to meet the needs of small and medium industries. Most of the States also have Industrial Development Corporation/ State Industrial Investment Corporations mainly for doing promotional work in the sphere of industrial growth though some of them also provide finance industry mainly through participation in share capit In addition to the above institutions the Life Insuran Corporation (LIC) and the Unit Trust of India (UI also partake of the character of industrial financ institutions though this is incidental and their aim mainly to seek secure and profitable lines of inve ment for their surplus funds. The former is now important contributor of loans and underwriting ass tance to new industrial projects while the latter provid assistance on a smaller scale by investing in shares ar debentures.

Dr. Nar[illegible] is an officer in Small Industries Service Institute, [illegible]r, Kerala.

The total volume of assistance to industries fro these institutions upto March, 1978 along with a coi parative picture of their individual contribution well as the types of assistance provided, is given in t table.

The total assistance to industry, sanctioned by all t term lending institutions upto March, 1978 has be of the order of Rs 6,507 crore, IDBI being the large contributor. The biggest purveyor of foreign curren loans is the ICICI which also provides substantial rup loans and underwriting assistance. The SFCs provi the bulk of their assistance in rupee loans. The maj portion of IFCI's assistance is also in rupee loa While the IFCI also provides substantial amounts foreign currency sub-loans, it was slow and hesita to take up underwriting so that assistance in that for works out to an average hardly Rs. 2 crore per ye of its assistance. While some of the SIDCs are con nuing to make significant amounts available throu rupee loans as well as underwriting of and direct sub criptions to share capital, they are all now concentr ting on promotional activities The IRCI provides on rupee loan assistance, to the sick and closed uni mostly in West Bengal and the amounts provided ha been modest. LIC tops in the matter of underwriti assistance and also provides rupee loans while UT assistance is entirely in the form of purchase of shar and debentures. The actual disbursements of assistan by all the institutions together upto March, 19 amounted to Rs. 4,071 crore. In addition, the ins tutions have also provided guarantees for deferred pa ments on purchase of machinery and for foreign loar

The commercial banks in India generally provi the short-term requirements of industry mainly f meeting working capital requirements. But in the la

Table 1

Financial assistance sanctioned by term-lending institutions (upto March 1978)

(Rs. in crore)

Term-lending institutions	Year of commencement	Rupee loans	Foreign currency loans	Underwriting	Direct subscription and debentures	Total
IDBI	1964	2743* (597)	.	104 .	18	2865* (79)
IFCI	1948	551	70	46	14	681
ICICI	1955	268	520	73	44	905
IRCI	1971	54	.	..	..	54
SFCs	..	1,026	38	16	1	1,081
SIDCs	..	..	..	115	1	342
UTI	1964	.	..	44	44	117
LIC	1956	243	.	100	119	462
Total		5,111*	628	498	270	6,507

*Including refinance to **SFCs** indicated in brackets

decade or so they have also been engaging in medium-term financing to assist not only the modernisation and expansion programmes of established concern but also for the setting up of new units The availability of refinance from the IDBI and the growth in their term-deposits have provided the stimulus to their term-lending operations.

Demand for Investment Funds

The resources of the term-financing institutions have been fully extended and are hardly adequate to meet even the present demands fully; some of them had occasionally to adopt a selective approach in sanctioning assistance in the face of excessive demands. India has perhaps just crossed the threshold of industrialisation and the demand for investment funds is found to go up sharply with the growing tempo of development The country's Sixth Plan envisages a massive step-up in industrial outlays : the public sector industrial outlay will increase by about Rs. 3,000 crores to Rs 10,350 crores and the outlays in the private and co-operative sectors of industry are together estimated to go up by about Rs. 2,000 crores to about Rs. 7,000 crores. The total industrial outlays under the Sixth Plan will thus exceed Rs. 17,000 crores. Taking into account the country's development potential and the intensified efforts to achieve speedy indstrialiasion, it is not difficult to foresee that the demand for long-term funds for industrial development will go up by leaps and bounds. For example, the discovery and development of the Bombay High Oil holds out the prospect of a big leap in this feld and the oil from this source will no doubt form the basis of large petro-chemical complexes. This is a line in which very high investment is called for and it is reasonable to assume that the investment needs in this line alone will be gigantic by past standards.

Meeting the Growing Needs

The foregoing prospects highlights the need for timely action to ensure the availability of machinery for adequately meeting the growing needs for industrial finance. The challenge can conceivably be met in several ways. One of them would replace the existing system of financial institutions by a new set-up with specified functions and adequate powers for its constituents to accomplish the bigger tasks. But this would go against the proper evolution of a system, growing, in response to, and in tune with, the emerging needs. Moreover there is an element of experimentation in this step as it is difficult to foresee with any degree of certainty the successful working of the new system. Even if it is one that has succeeded elsewhere there can be no guarantee about its performance here. The risk in the experiment is something we can ill afford at this juncture. Another possible course would be the creation of additional institutions to supplement the existing ones; but this will not only increase the cost of finance to industry but add to the already severe strain of the availability of the right type of personnel for manning the institutions. On the whole it would appear best to retain the existing system which has more or less stood the test so far and improve upon it.

The present system of industrial financing institutions has grown with Indian industry and its constituents came into being to meet specific needs. Despite short-comings here and there they have by and large succeeded in meeting the needs of industry and with the coming of the IDBI as the apex institution they together constitute an integrated and fairly well-coordinated financing system with overlapping of functions reduced to a workable minimum. In the matter of sanctioning of loans, for instance, the SWCs restrict their activities to loans not exceeding Rs. 30 lakhs and the IFCI to those for amounts in excess of Rs. 30 lakhs and up to Rs. 2 crores while the IDBI generally handles only bigger cases resulting from the needs of high-investment priority industries like alloy steel, cement, paper etc. It would be comparatively easy, without incurring much expenditure or unduly straining the pressure on availability of specialist personnel to develop the existing institutions for handling the larger volume of business which they will be called upon to do. This may call for various steps like the opening of additional branches; re-definition of functions, limits, procedures, etc. enhancement of resources—and necessary legal changes to give effect to all these.

Aquaculture in West Bengal: Tasks Ahead

Biren Saha

DESPITE all the recent advances in aquaculture technology, West Bengal is yet to make a headway in the systematic development of its fishery resources. While this predominantly fish-eating State suffers from an acute shortage of this animal protein today, most of the fish farmers continue to employ the old traditional practices of pisciculture. As a result, the average production has not gone up much beyond the national average of 600 kg. per hectare per annum. On the contrary, in some water-areas of the State, especially in the north, the rate of production has gone down this average level in recent years. According to an estimate of State Fisheries Department, West Bengal required 2517 tonnes of fish (at the rate of 50 gms. per head) a day last year. Compared to that, its total production of fish was a little more than 816 tonnes per day. Three years ago i.e. in 1976, State's daily production was 774 tonnes against the demand of 2388 tonnes. Calcutta and its suburban agglomeration account for 22.5 per cent of the total fish consumption of the State. But about 60 per cent of Calcutta's requirement is met through imports from other fish-growing States. But imports of fish from other States have remained almost static over the years, sometimes showing a marginal fall. At the same time the number of fish-eating population has gone up along with the rise in State's total population. Therefore in the absence of a boost to fish production, an unsatisfied market demand for fish persists. An official of the State Government states that out of West Bengal's total annual requirement of 8.50 lakh tonnes, about 3.05 lakh tonnes are available from the State's own resources.

Aquaplosion

This unenviable position of West Bengal's fish supply however, has developed inspite of the fact that the Central and the State Governments are continuing their concerted efforts to accelerate the pace of development of inland aquaculture in West Bengal. The State is fortunate enough to have a vast waterarea including rivers, lakes, reservoirs, tanks, village ponds and swamps which can be profitably exploited to bring in what can be called 'acquaplosion'. West Bengal being a coastal State it has a tremendous possibility of culturing-fin-fish and shell-fish in its large tracts of brackishwater. Thanks to the long 30-year research by Central Inland Fisheries Research Institute that the country can now boast of having 28 fish production technologies, a coordinated and systematic application of which can truly usher in a fish revolution in West Bengal. Repeated trials of one of these technologies widely known as Composite Fish Culture have shown that on an average a fish crop of 3,000 to 4,000 kg. per hectare is attainable in village ponds ranging from 0.1 to 2.0 hectare area. The operational cost of this system of fish culture has been proved to be very low and advantageous. A survey of the adoption of this technology under a West Bengal Government Scheme reveals that 91 farmers got an average yield of 4372 kg. per hectare at an average production cost of Rs. 2.62 per kg. in 1975-76, while 157 fish farmers got an average of 4099 kg. per hectare in 1976-77 at an average production cost of Rs. 2.85 per kg. The profitability of the system is obvious when we consider that prevailing retail price in West Bengal for carps rule around Rs. 16 to Rs. 22 per kg.

Another important low-cost high-yielding fish culture technology developed by this Institute is the mixed culture of *magur, singhi and koi* in small, shallow and derelict ponds yielding an average production of 1.2 tonnes per hectare in just six months without any supplementary feeding.

Brackishwater Aquaculture

The Institute has also made a major stride in the development of brackishwater aquaculture. In its experimental fish farm at Kakdwip, 24-Parganas, various techniques of brackishwater seed collection, preparation of nursery and rearing ponds as well as water management are being demonstrated in 34 ponds. Most spectacular achievement of this centre has been the induced maturation and breeding of *Bagda*, the tiger shrimp in unpounded brackishwater ponds. Recently a major breakthrough has been attained by the Institute's Bakkhali farm in controlled breeding of pond-reared tiger prawn through by the method of eye-stalk ablation. The Kakdwip centre has succeeded in raising three crops of tiger shrimp in a year totalling a produce of 1185 kg. per hectare.

The development of the new technology of induced breeding by the Institute has made it possible for farmers to produce their requirements of quality fish seed in remote rural areas of the State where riverine spawns are inadequate in supply.

At Khardah, 24-Parganas, the Institute has been successful in developing paddy-cum-fish culture in deep-water fields and sewage-fed technology. Application of the techniques on a wide scale is likely to give a new thrust in aquaculture in West Bengal in the days to come.

The Central Inland Fisheries Research Institute at Barrackpore along with its substations at Cuttack and Allahabad and its 33 research centres spread over the country are primarily concerned with research, training and demonstration programmes in aquaculture. But in recent years, the Institute has intensified its efforts to take its various fish production technologies to the farmers' doors.

Aquaculture Technology

During the three-year period from 1975 to 1978, a package of aquaculture practices were demonstrated by the scientists of the Institute in 26 villages spread over three districts of West Bengal. For this purpose, about 144 ponds of private fish farmers were selected. The demonstration of the new aquaculture technology involved seed production by raising and nursing young fish right from the eggshape to table-size. The total yield from these ponds under composite fish culture were 127 tonnes. This result-oriented demonstration has undoubtedly motivated many fish farmers of this State to adopt the new technologies. The Institute has

Biren Saha is Asst Editor, Dhanadhanye *(Yojana Bengali) Calcutta*

in the recent past trained a large number of fishermen, fish farmers, educated unemployed youth and entrepreneurs in various fish farming technologies in both fresh and brackishwater bodies. Its demonstration centres at different places have shown the fish farmers better pond management, seed collection, fry raising and improved farming technologies. The outcome of these programmes has been the establishment of a number of fish farms and generation of self-employment for a number of rural unemployeds.

This year the Central Inland Fisheries Research Institute has intensified its efforts to transfer improved fish farming technologies to pisciculturists under 'Lab to Land programme' launched in commemoration of the Golden Jubilee year of the I.C.A.R. For this purpose each of the 33 centres of the Institute has adopted two Golden Jubilee fish farmers and 20 beneficiaries. I had the occasion to see the fish pond of one such Golden Jubilee farmer, selected by the Kakdwip centre. Shri Madhu Sudan Das, the said farmer, has two brackishwater ponds in which he has been given spawns and prawn seeds and necessary inputs by the nearby Kakdwip Centre and has been shown the practical way of application of brackishwater technology for polyculture of *parse*, *bhangan* and *bhetki* and monoculture of tiger shrimp. The different centres of the Institute thus propose to hold 1274 demonstrations at 66 worksites in order to spread the gospel of new technology of aquaculture.

Popularising New Technology

These demonstrations and observance of Fish Farmers' Days at different places in West Bengal might create an awareness among a section of fish farmers about the prospect of new technology-oriented aquaculture. But a great majority of fish farmers will still then remain unaware of the new techniques of increasing fish production. Ultimately, it is the responsibility of the State Government to take the improved technologies evolved by the Institute to the doors of the fish farmers, aquaculturists and landless farmers in order to ensure increased production of fish. Fortunately, the State Government has recently been aware of this immediate task. The State budget on fisheries has been raised to Rs. 4.47 crores in 1979-80 from a mere few lakhs of rupees in 1975-76. It is the aim of the Government to bring all the waterways of the State under pisciculture through reclamation and to encourage the fish farmers to adopt new technology. Already a district-level training-cum-demonstration farm in each of the districts under a District Agriculture Officer is engaged in the dissemination of the new technical know-how to the fish farmers. District level publicity units are also occupied with this job. Besides, Fisheries Extension Officers are working at the block-level to publicise and demonstrate new aquaculture technologies and supply seeds and inputs at subsidised rates. Large fish farms of the State Government at Malda and Kalyani are playing a very vital role in this regard. Seed production farms are at present functioning mainly at the district level. In recent years 110 seed production units, each of one bigha waterarea, have been set up at the block-level. This year 44 more such units are to come up at the block level. The State Government is also encouraging the setting up of fishermen's cooperatives in order to help them with necessary credit, quality seed and other inputs. This year an ambitious Rs. 12.5 crore project for the development of inland fisheries have been approved. The project, assisted by the World Bank will be launched next year.

Apart from providing extension services to the fish farmers, the State Government is itself trying to augment fish production in its own fish farms. The State Fisheries Development Corporation, started in 1966 is engaged in increasing fish production on a commercial scale. During its twelve year existence, the Corporation has succeeded in raising the yield of fish from a mere 24.4 tonnes in 1974-75 to 79.5 tonnes in 1978-79. That apart, its brackishwater and sweetwater fish farms at Alampur, Digha, Maharajganj and Kangsabati have become the centre-points of improved aquaculture activities in the State. Last year, the Corporation started a 200-hectare ambitious brackishwater farm at Henry's Island near Bakkhali. This year three more fish farms have been taken up at Basanti in 24-Parganas, Krishnabandh in Bankura and Ranibandh in Purulia. When production starts in full-scale at all these farms, the Corporation might be able to play a vital role in meeting the State's increasing demand for fish. The Corporation has already mastered the technique of reservoir fishery. The aquaculture work started in 1979 in Kangsabati reservoir in a modest way has meanwhile begun to pay rich dividends. This year, it has planned to set up a hatchery at Ambari-Falakata in Jalpaiguri district to cater to the need of supplying improved seed to the neighbouring fish farmers. The district hatcheries to be set up under the new World Bank assisted project will of course, go a long way in meeting the shortage of improved seeds in the State.

While all these projects are on, the State's drive for accelerated aquaculture development is likely to meet with limited success due to the presence of a few constraints. While the science of aquaculture in the State has come of age, the progress of its application has been rather tardy largely because of these constraints. One of the constraints has been the paucity of quality fish seed especially in North Bengal. A massive effort should be launched for large scale production of carp seed through induced breeding technology. Seed farms should be spread at the Panchayat level. The reclamation of private-owned derelict ponds at a nominal charge should consist a part of the job of the block-level Fishery Development Officers. This will help greater use of these ponds for pisciculture purposes. There should be a greater linkage of extension division of the Central Inland Fisheries Research Institute with the extension wings of the State for an effcient use of technologies. Credit is also a big constraint. The financial institutions should realise, if a more liberal credit system is evolved through the constitution of cooperatives, that will give a great impetus to small farmers to take to new aquaculture technologies on a larger scale. Aquaculture should be developed as a major cottage industry so that it will not only result in aquaplosion, but will also provide subsidiary employment to thousands of small and marginal farmers. □

Urbanisation

India's Urbanisation 1901—2001; Second Edition, by Ashish Bose; Tata McGraw-Hill, Delhi 1978, pp. 567, Price Rs. 96/-.

RAPID urbanisation has been a world-wide phenomenon in the present century. India, too, is facing the same trend, but in view of the urban poverty, which is a repercussion of rural poverty, it is serious. The study on India's Urbanisation is a systematic, timely, and comprehensive exercise in this context.

Highly priced, the book has been divided into seven parts, which cover all the relevant and related aspects of India's urbanisation. The author while examining the process of urbanisation in India has rightly pointed out the deficiencies of Indian universities, where urbanisation, an important subject, is rarely taught. Apart from Part One on the overview on the process of urbanisation and Part Seven on a rigorous statistical profile, the book has been divided into five parts. The book contain a Foreword by C H Hanumantha Rao.

Based on secondary sources, the author has tried to redefine urbanisation suiting Indian conditions to show the efficacy of census data in this field, historical view of urbanisation, its pattern and has also examined the views of the eminent writers on rapid population growth and its impact on urbanisation and surplus labour The views of eminent economists like Arthur Lewis and Simon Kuznets have also been examined. The implications of projection upto 2001 are very ably discussed specially in the context of rural transformation.

The book provides an excellent profile of statistical work in Part Seven covering the period 1901—1971. It would have been better if second edition had given the latest data from the sources other than the census It would have been desirable to provide a selected Bibliography at the end of the book. The author who is also an authority on demography and population studies, has rendered a valuable service by his experiences through the second edition of this book.

B. N. Sahay

Economics

Indian Economic Thinking : A Seminar Compilation; Edited by Romesh Thapar ; Allied Publihers Ltd. 1979, pp. 203 Price Rs. 50/-

THIS is a rather unusual publication, comprising of articles on planning contributed bf different well-known economists to a monthly journal *Seminar* edited by Romesh Thapar. Thapar's views on the subject of planning are too well known. He advocates total planning for India on the Soviet model.

But the essays brought together in the present volume deal with several aspects of planning; and there is no all-pervading continuity of thought or cohesion. This is inescapable in a compilation like this.

Views of the economists on planning also differ so widely that it is very difficult to infer what is the particular aim of planning itself. Dr. K. N. Raj, for example advocates a policy of hastening slowly. Amartya Sen wants planning for socialism. Jagdish Bhagwati pleads in favour of mixed economy. And several other contributors touch upon agriculture, land reforms, inflation, exports, role of controls in the economy and self-reliance.

On the whole, however, the reader gets more and more confused than enlightened on the scope and content of planning, although each contributor has cogently argued his point of view on the particular subject he deals with.

One gets the impression of a dissected economy and not of the whole. Even as a human body with various functions becomes healthy and active only when a harmonious balance of functions is maintained, so too, the economy of a country like India could be meaningful only when viewed in totality. Too much of emphasis on one aspect or the other inevitably leads to a distortion

Specialists are, however, needed. But too much reliance on them or their views would only endanger the corpus of planning. If left to the economists, India would never have had any meaningful development at all, because no two experts agree on anything They have to be kept at a safe distance while the administrators have to consult them and even adopt their views in a limited way.

However, the compilation helps to bring in sharp focus how the experts differ both on the concept of planning, methodology adopted and the process of implementing the programmes. I do not know for what purpose the compilation is made, except perhaps to give a broad cross-section of views on planning and leaving the modern student to infer whatever he wants The book lacks in giving a coherent guidance as how planning should be done. Planning after all should be an integrated exercise in the totality of economic development of a large and poor country like India.

E. P. Radhakrishnan

Rural Disparities

Correlates of Literacy and Agricultural Growth in Manipur by Dr. D. S. Sharma (Publishers : Shekar & Sons, Khwai Brahmapur, Imphal, 1979; pages xxxiii + 283 ; Price : Rs. 30.

THE BOOK under review is an unimpressive attempt of analysing rich data collected through socio-economic surveys at village level. Based on the census reports and socio-economic surveys conducted by the author of this study, data relating to

six villages of Manipur—3 villages belonging to Manipur Central district (Shikhong, Shamuron and Mullargaon) and 3 villages belonging to Tengnoupal district (Moluam, Wabaching and Khollen Khadet)—are analysed in great details regarding the location, infrastructure, demography, working force patterns, occupational structures, education, (literacy and primary), land and agricultural aspects.

Even though Chapter 2 is monotonous dealing with the same aspects of different villages and with large number of tables, it does provide an insight into disparities between different villages in the socio-economic infrastructure, size of the land holdings, productivity etc.

Chapter 3 presents an analysis of household schedules with respect to inter-occupational variations in the size of the households, income levels, literacy, education, migration, immigaration, modes of agricultural production etc.

Chapter 4 concludes the book with a few general observations.

On the whole, the book contains vast and rich material. Data are presented in great detail in several tables. But the content of the book is not well organised. From the technological point of view, the book provides an evidence for the backwardness of the state in the infra-structure like printing presses.

Jandhyala B.G. Tilak

Magnus Revived

Magnus and Muses : Off the Record Musings of M.C.. "Compiled and edited by Harindra Srivastava ; Academic Press Gurgaon. PP 240, Rs. 60.00

I AM HEREWITH returning the Padma Bhushan Sanad and Medal which I received in the 1968 Republic Day awards. I had refused the award in 1967, but was asked again and allowed myself to be persuaded to accept it in 1968. I have regretted my decision since then. I seen no point in carrying the burden of a distinction which I may not deserve and which is meaningless to me as incentive. The awards are recommended, I believe, by advisers of the highest integrity, though a certain individiousness of some distinction might become inescapable, but it seems to me better to remain undistinguished than to conform to some categorised distinction.

With these words M. Chalapathi Rau returned the certificate and medal in 1969.

M.C. belongs to that class of dedicated souls whose very work has been their worship. During his more than 30 years of editorship of the *National Herald,* hardly any day had passed without his editorial. That he was not in town, didn't make any difference; for he would send it from wherever he was. That he returned late in the night, posed no problem ; for, be it the station or the airport, he would first dash down to the office, do an editorial or his MAGNUS column or both and then go to his residence. Literally wedded to the paper, he couldn't think of 'another' marriage. At 70, he is still a bachelor.

This anthology of his Magnus writings in the *National Herald* is a brilliant example of his journalistic, academic and literary calibre. What is most vital about his genius is his versatility—the vast canvas of his thinking and the infinite variety of themes and subjects. He did not write on a subject because it was interesting; it became interesting because he wrote on it. The etymology of Ping-Pong is discussed with the same authenticity as the diplomacy of Chanakya and Machiavelli. The handling shows the comfort and ease of a native.

Carefully compiled and edited, the volume makes a stimulating study. And for its beautiful production, three cheers to the publisher.

—Ashok Singh

Selling Goods Abroad

Exporter's Practical Guide 1978-79 by G. D. Sharma, Sharma, U.B.S. Publishers and Distributors Ltd., 5, Ansari Road, New Delhi; pp 160; Price Rs. 28

SELLING goods abroad is as exciting as it's rewarding. In India, opportunities in export business were never so better and bright as they are today. With this introduction, the author elaborates in 160 pages all the details about what to export and how. He has been regularly bringing out editions of "Exporter's Practical Guide" for the past three years.

The book gives in detail, and in lucid language, all the facilities available from various departments of the Government to export houses. The entire information in this book has been updated in the light of the industrial policy of the Government announced in the current year.

While mentioning the large number of development councils which are available for seeking advice pertaining to export of a particular item at the Central and State levels, the author gives a list of other helpful organisations like the Shipping Agencies and Advertisement agencies. There is a separate chapter on Overseas Selling Methods, an exporter can choose the one which suits him most. For example, "there is direct selling to buyer, selling to importers' agent, merchant exporters, groups selling and export house method".

There are a number of useful annexures which have immensely increased the value of the book. One deals with product groups taken up for export development by Trade Development Authority; another mentions some common errors which should be avoided in export documents; the third gives a complete list of India's Commercial Representatives abroad, and Foreign Trade Represetatives in India.

Baldeo Sahai

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Water Pollution in Urban Areas

Perhaps no significant improvement of the country's aquatic environment is possible as long as the cities continue to pour the waste waters to the natural water courses.

India is poised for a significant industrial growth and in future the pollution load will increase many folds unless proper care is taken.

Do we drink 'Adam's ale' or plain sewage ?

A Common sight in our country

Washermen cleansing clothes bid making water unclean

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yojana

Resumption of Planning

YOJANA

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Photographic Officer : P. K. De
Artist : P. K. Sen Gupta
Advt Manager : T. R. Maheshwari

Editorial Office :

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Editorial

Plan Strategy

WITH the first meeting of the re-constituted Planning Commission on April 21, the one year old uncertainty about planning has ended and the work of preparing the Sixth Plan for 1980-81 to 84-85 has begun in right earnest. Of course, the previous Government had formulated a draft Sixth Plan but it has become out of date because of the political change, double digit inflation, unprecedented budgetary deficit of Rs. 2,500 crore, sharp rise in the cost of imported oil, decline in the rate of growth of exports, the weakening of infrastructure planks like power and transport and the consequences of last summer's disasterous drought. Further, the Rolling Plan idea pursued so for has not, like the rolling stone, gathered any moss of growth.

The New Commission has proposed an annual growth rate of 5 to 5.5 per cent. The rate mentioned in the earlier draft was 4.7 per cent. Since the average rate of growth in the past two decades has been only 3 to 3.5 per cent, the proposed rate of 5 per cent may appear to be too ambitious. But as the Member-Secretary of the Commission has stated, this estimate is based on the hope of better management of existing resources and ensuring higher utilisation of the existing production capacity, half of which now remains unutilised. As the Deputy Chairman later stated at Hyderabad, the new growth rate will, to a large extent, depend on the agricultural sector which should grow atleast at the rate of 4 per cent. But farm growth depends much on the favours of the weather god. Several internal and external factors will also affect the pace of developmental work. Anyhow setting the target at a little higher level and striving to reach it is better than fulfilling a low target.

The broad guidelines given by the Prime Minister at the first meeting will help the Commission to prepare a draft Plan in such a way as to ensure fast and balanced economic development based on self-reliance and a more equitable distribution of the fruits of planning. The proposals to seek a national concensus on the basic issues of planning and to consult panels of experts on the different programmes can make it a popular as well as a professional plan.

Instead of making it a formal function, the Commission took a number of policy decisions in the first meeting itself. Since these decisions will adversely affect some of the sacred cows and white elephants in our economy, it will need all the available political will to include them in the final plan and implement them in practice. Meanwhile let us wait for the new draft Plan which is expected to be ready by the end of the year. □

TRENDS

Planning Resumed

THE proposed new Five-Year Plan for the period 1980-81 to 1984-85 will aim at an annual growth rate of 5 per cent. The possibility of increasing the rate to 5.5 per cent will also be explored. The kingpin of planning will be self-reliance.

This decision was taken at the first full meeting of the re-constituted Planning Commission under the chairmanship of Prime Minister Indira Gandhi on April 21, 1980.

Dr. M. S. Swaminathan, the acting Deputy Chairman of the Commission, Dr. Man Mohan Singh, Member-Secretary, Shri Mohammed Fazal, Member and Shri R. Venkataraman, Finance Minister and senior officials and advisers of the Planning Commission were present at the meeting.

It is hoped the draft Plan will be ready by the end of the year so that it can be considered by the National Development Council early next year. The thinking behind the Plan will be reflected in the 1981-82 budget.

The Prime Minister in her opening speech stated that the amelioration and improvement in the life style of the weaker sections of people and of women and children should be the social objective of planning. Some other points made by the Prime Minister are as follows · The Rolling Plan concept meant an end to the planning process and so has to be given up. While continuous evaluation, monitoring and mid-term corrections may be needed, the concept of discipline in planning cannot be given up. The people should be involved in formulating and implementing the Plan and the fruits of planning should reach all sections. Since the resources are limited, they should be utilised to the optimum level. While planning should be realistic the sights must be somewhat high in keeping with the needs of our large country. Importance should be attached to family planning programme. The public distribution system must effectively insulate vulnerable sections from shortages and price rise. There should be sectoral harmony between agriculture and industry and environmental problems should be promptly attended to. Resource constraints should not adversely affect health and education programmes. Indigenous technological effort requires to be setpped up and, at the same time, obsolete technology should be discarded

Dr. M. S. Swaminathan, later told newsmen that the Prime Minister had decided to convene a meeting of representatives of various political parties, professions, etc., for achieving a national consensus on the basic issues of planning. Dr. Man Mohan Singh said that the growth rate of five per cent would be feasible with better management of existing resources and ensuring higher utilisation of the capacity already created

The meeting took a number of policy decisions on resource mobilisation, the role of corporate sector in planning and wages and income question. It was decided to give highest priority to the ongoing projects and those projects which require short gestation period. The Commission will set up professional panels on power, coal, transport, irrigation, environment and science and technology. Greater stress will be laid on rural development for which an integrated programme will be evolved. There will also be special programme for tribal people, hill areas, scheduled castes and the north-eastern region. One of the objectives will be the provision of drinking water to all within five years.

12 Point Programme to Fight Drought

THE Prime Minister Mrs. Indira Gandhi has outlined a 12-point Plan to meet the drought situation. The Union Agricultural Minister has forwarded the programme for immediate implementation to the Governors of Uttar Pradesh, Madhya Pradesh, Bihar, Orissa, Rajasthan and Maharashtra and the Chief Minister of Andhra Pradesh.

Following is the 12-point programme :

(1) Full time Relief Officers :

The districts likely to be most seriously affected by scarcity of food, employment and/or drinking water should be identified and full-time Relief Officers appointed immediately to assist the District Officers. (The District and the Relief Officers should be handpicked and proven for their devotion to work and to the cause of the suffering poor. Adequate incentives may also be given.) Relief operations should involve all departments.

(2) Monitoring :

Daily monitoring of the situation in regard to food, employment, starvation and drinking water should be conducted at the State level for each district, and at the district level for each village or panchayat and timely action taken.

(3) Availability of foodgrains :

While efforts should be made that all godowns of the Food Corporation of India should have adequate stocks of foodgrains, the State Government should open buffer godowns in seriously affected blocks and ensure that no area suffers from non-availability of foodgrains Movement and despatch plans for foodgains should be finalised in consultation with the State Government by the representative of the Food Corporation of India and followed up daily in joint meetings by the representatives of the State Government, the Food Corporation of India and the local Railways.

(4) Fair Price Shops :

Fair Price Shops at the rate of one shop for 2,000 persons should be established through private or public agencies, and supplies of foodgrains, sugar, edible oil and kerosene arranged through them. Assistance of banks should be ensured.

(5) Anti-social Elements :

Continuous legal, administrative and social pressure be mounted against law breakers, black marketeers, profiteers and hoarders, and deterrent and demonstrative action taken against all such elements who try to exploit the scarcity situation.

(6) Food-for-Work :

Continuity of Food-for-Work programme should be ensured by a shelf of schemes at the Panchayat circle level and continuity of payment within a week ensured by availability of foodgrains and "on account payment" if measurement of work done is likely to be delayed.

(7) Afforestation :

A plan for massive plantation of trees should be mounted as a campaign in the drought-affected States. This should comprise arranging nurseries and digging of trenches, pits, boundary walls, etc., for afforestation. The campaign should be given a high priority in the Food-for-Work Scheme. Enhanced targets for plantation in the degraded areas of the reserved and protected forests as also on community land, canal banks and roadsides should be taken up on the onset of the monsoon as a continuation of the scheme of employment.

(8) Food for Nutrition Programme :

Free foodgrains had been offered to the States for feeding the destitutes, etc., but very little of these has been utilised. Every Panchayat circle must have a feeding centre for children, nursing mothers, pregnant women and the destitutes who cannot be employed. Skimmed milk powder and edible oil should also be utilised.

(9) Contingency Plans :

Contingency Plans for supply of water to the identified villages should be drawn up and advance action taken for arranging tankers, trucks, drums, diesel, etc.

(10) Public Health Measures :

All available public and private sources of water should be protected, impounded, disinfected and expanded to cover as many villages as possible

(11) Rigs for Boring Drinking Wells :

Rigs of all the departments and of all types along with the crew should be mobilised on a war footing and used for boring and deepening of wells in the most seriously affected areas.

(12) Cattle Camps and Relief Camps :

Sites of cattle camps and relief camps near the water sources should be identified and advance action taken for opening them at a short notice.

Compulsory Participation of Workers in the Management

THE Central Government may bring forward a legislation for compulsory participation of workers in management in the industries employing 500 or more workers. The Labour Secretaries conference held in New Delhi recently agreed that workers' participation in management should be introduced statutorily. It was felt that the measure should be enforced after the popular Governments in the States had taken charge.

The earlier scheme providing for optional participation in management was reviewed and it was found that the requisite information about its implementation was not available. The conference also took stock of the progress of rehabilitation of bonded labourer. It was found that there was great variation in the figures of the bonded labour in the country. Some State Governments had not utilised the full amount and some had not informed the centre if the amount had actually been utilised by them.

PM's Appeal to Avoid Extravagance

EVERYONE knows of the stresses and strains to which our economy has been subjected particularly in the last two years. The prices of all essential items went up at a very fast rate: the problems of inadequate generation of power, poor production of coal, steel and other key inputs and low productivity in the transport sector have combined to aggrevate the situation and create scarcities. The recent budget revealed how wide was the budgetary deficit in the year gone by.

Ever since our Government took over, we have been trying to find solutions to these problems. They cannot be wished away or solved overnight. We cannot also shy away from our commitments, international or otherwise. The reconstruction of the economy will take time. The house was allowed to fall in disrepair by Governments which were not equal to their responsibilities. It has to be rebuilt brick by brick. In this great task we need the understanding, sympathy and cooperation of all our people.

The restoration of the health of our economy cannot be our only goal. We have to look beyond and work for social and economic justice. There are vast numbers to whom each new day is a struggle. We have to commit ourselves unwaveringly to the removal of the disparities in society, and as a first step we must minimise the hardships and suffering of those who do not have even the elementary necessities of life like food, water and shelter.

To what extent have the well-to-do amongst us paused to reflect about these problems and shown such a commitment? Perhaps having simpler ceremonies for marriage etc. will not make a great difference financially but ostentation imitates the general public. Also it creates an atmosphere where those who cannot afford such luxuries are compelled to follow suit.

Every religious and social group has its time-honoured rituals. But we must take especial care to avoid waste of all kinds particularly of essential items like sugar and power which are in short supply.

We can be hospitable without showing off. We can make friends without flattering them with extravagance. I appeal to all my fellow citizens, young and old, to make special effort to avoid all wasteful and extravagent expenditure and show on social occasions. The time and resources so saved will be better spent on improving conditions as in everyone's neighbourhood.

Integrated Rural Development Programme

THE Small Farmers' Development Agency (SFDA) and the Integrated Rural Development Programme (IRD) is to be extended throughout the country. The financial resources hitherto made available to only 50 per cent of the IRD blocks for implementing schemes of full employment in rural areas in 1980-81 will be extended to all IRD blocks. Each block will now be given Rs. 5 lakhs. These decisions were taken at a high meeting presided over by Rao Birendra Singh, Union Minister of Agriculture.

Award for Indian Space Scientist

PROF. YASH PAL of India has been selected for this year's Marconi International Fellowship award. The award is in recognition of Prof. Yash Pal's contributions to "advances in communication sciences and technology for development".

Prof. Yash Pal, Director of the Space Applications Centre, Ahmedabad, is not only the first to win the coveted award but is also the first scientist from a developing nation to be honoured with it.

The award carries a grant of 25 thousand dollars and is likely to be presented in October this year.

LIC Improves Performance

THE LIC procured Rs. 668 crore of new business under the individual assurances in 1978-79. This marked an increase of 33 per cent in new business and 19 per cent in the number of policies. In group insurance business the total sum assured increased to Rs. 5,293 crore from Rs 5,078 crore in the previous year. As many as 1,145 group insurance schemes were installed during the year compared to 969 schemes in 1978-79, an increase of about 16 per cent. More than eight lakh new lives were covered under group schemes during the year.

First Solar Water Pump Installed

AT Awania, an un-electrified village of Gujarat a Solar water upmp, first of its kind in India, has been installed. The pump is supplying drinking water by using solar energy. The complete system is indigenous. It consists of 16 solar photovoltaic modules, two lead-acid truck batteries and a DC motor-pump of 125 watts capacity. The total photovoltaic array capacity is 112 watts peak, covering an area of 2.1 sq. metre. The generated electrical energy from the photovoltaic array is stored in the lead-acid batteries, which, in turn, deliver the energy to the motor-pump set. The daily water output from the motor-pump set is about 7,000 litres.

STEP BY STEP

Houses For The Poor

THE Housing and Urban Development Corporation (HUDCO) a Government of India Enterprise has sanctioned 49 new schemes for the construction of over 61,000 dwellings in eight States at a project cost of Rs. 35 crore. HUDCO's loan component for these schemes will be about Rs. 20 crore. This brings the total loan sanctioned by the HUDCO in the first quarter of 1980 to about Rs. 46 crore for 79 schemes. Mostly these units are meant for families of lower income group.

The HUDCO has also for the first time sanctioned two urban development schemes to supply water and improve sewerage facilities of Abhor town in Punjab at a cost of Rs. 107 lakh of which HUDCO's loan component is about Rs. 50 lakh.

Paddy Husk Combustor

THE Central Mechanical Engineering Research Institute, Durgapur, in collaboration with the Central Fuel Research Institute Dhanbad, has developed a paddy husk combustor. It is used for drying paddy in rice mills. Apart from making use of the paddy husk waste the machine reduces the cost of dryings paddy also.

Bauxite reserves up

FOLLOWING the discovery of large deposits of bauxite on the east coast of Orissa and Andhra Pradesh, its reserves have gone up from a mere 2,500 lakh tonnes in early 1970s to 20,000 lakh tonnes.

Mineral Exploration Corporation Ltd (MEC) took up ten major bauxite enriched blocks for assessment on the basis of which the centre has decided to establish two alumina plants of about six to eight lakh tonnes capacity each, in this region.

Prosperity Through Community Effort

CONVERTING a wide stretch of 60 acres of barren land into green agricultural fields is no one man's job. The small and marginal farmers of Harishchandrapur and Pipla of Malda district, West Bengal, are the poineers of a joint venture project. About 45 in number, they organised an irrigation cooperative society. The local State Bank came forward in extending finance and advice. So far they were raising hardly one crop a year on that land and the uncertainty lied in sole dependency on rains. A community irrigation scheme of sinking twelve tube-wells with installation of electric motor pump sets was the best proposal for them. They formed Bangairia—Maszidpara Irrigation Co-operative Society Ltd. Of the total project cost of Rs. 96,000 the bank lended Rs. 66,000 and the SFDA also extended a big subsidy of Rs. 42,240.

Happiness has replaced the barrenness on the faces of these farmers. They are raising multiple crops on the land at present. It has increased their incomes substantially. They are growing paddy, jute, wheat, mustard, pulses, and vegetables. There is now no uncertainty in planning their crops.

Metal Utensils Industry of Basti District

Babu Ram*

BAKHIRA a village in Basti district of U. P. is the centre of a number of small scale industries manufacturing metal utensils. About 150 manufacturers are engaged in the industry at Bakhira and at Bharpurwa, another nearby village. The facilities, available in Bakhira are, a branch of the State Bank of India, District Cooperative Bank a Post Office equipped with telephone and telegraph facilities and power supply.

The units of the industry are self-managed. The main functionary in the unit is concerned with the purchasing of raw materials, other items, fuel, recruitment of skilled labour, direction of production process and the sale of finished goods. The legal organisation of the industry is 'individual ownership' the manufacturer being also the enterpreneur and responsible for profit and loss.

In our cohort most of the manufacturers interviewed, are of 40—60 years age-group and are educated upto or below the high school level. The utensil production is their traditional occupation and the present manufacturers have inherited the techniques and the organisational set-up from their ancestors.

Production

The products of the inlustry here are utensils commonly used for household purposes in India.

The manufacturing process includes melting, casting, moulding and turnery works at different stages of production. No machines are used in making the utensils and most of the work is done by hand with the help of tools like ladle and others. One rolling mill is working in Bakhira In the manufacture of lota, katora and parat, grinding machine, through check and lathe machines are used. These machines are operated on electric and diesel motors.

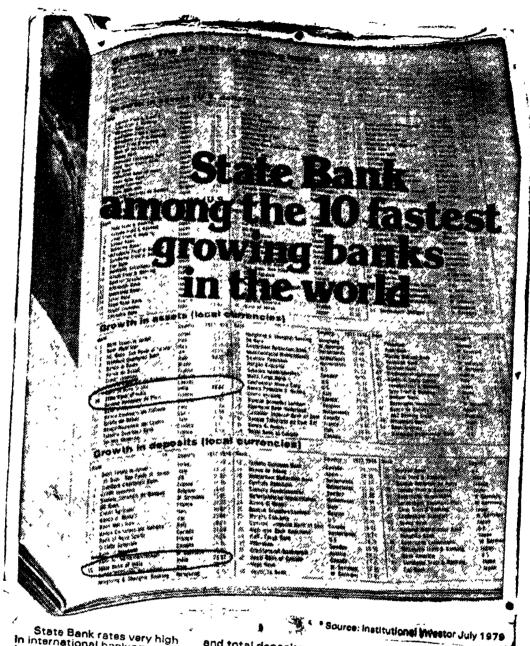
Marketing

The manufacturers sell the finished products by exchanging with old utensils which form the main raw-material. The difference between the sale price and the purchase price in the parlance is called 'manufacturing wage', which ranges from Rs. 3 to Rs. 7 per kg of the finished products. The wholesale stockists and sellers numbering about ten are the buyers of manufactured products and suppliers of raw-materials. The market extends upto nearby towns of Basti, Gonda and Gorakhpur districts. The wholesale stockists of Bakhira are the main suppliers of the utensils in other towns and they are sold to people of medium income group in rural areas.

Employment and Wages

This is a labour intensive industry as the main process of production is done by hand. The workers are employed on casual basis for four to five days in a month of slack season and eight to ten days in a month of busy season. The manufactures work with the labourers.

The main works are melting, casting, moulding and turnery which need two to three months training. The training is imparted by manufacturer in his workshop without paying any wages to the workers. Thus the labourers engaged in the industry do not get regular and full-time employment. The wage paid are proportionate to the weight of the metal processed by each worker. For example in Thali manufacturing

*Economics Lecturer, Kisan Degree College Basti U.P.

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State Bank among the 10 fastest growing banks in the world
Growth in assets (local currencies)
Growth in deposits (local currencies)

unit, wage rates were Rs. 11 per quintal for melting and casting, Rs. 7 per quintal for moulding and Rs. 40 per quintal for turnery and so on.

Raw material

The old metal utensils are used as the main raw material in the brass, bronze, aluminium, zinc-copper and nickel. There is no source to get pure raw materials like copper, nickel and aluminium in Bakhira.

The manufacturers cannot stock the raw material for want of working capital. The main problem related to the raw material is that the manufacturers are unable to get old utensils in busy season.

Capital Investment

The fixed capital is invested in building, land, tools and machines and the working capital in purchasing of raw material, fuel and for paying the wages. The capital invested in the units of different products varies. For example, in the thali unit the average capital invested is Rs. 9,000, in Lota unit Rs. 25,000, in a Basuli unit Rs. 7,000 and in Aluminium unit Rs. 19,800.

Loan Facility

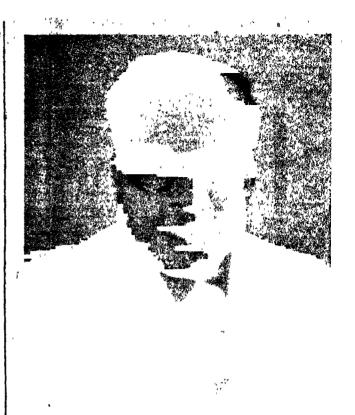
The State Bank of India, friends and relatives and wholesale stockists of Bakhira come to the rescue of the manufacture whenever they are in need of money. Out of 51 manufacturers interviewed, 25 had taken loan from the above mentioned sources and out of them 19 had borrowed from the Bakhira Branch of the State Bank of India upto Rs. 4,000 at 10 per cent interest rate. The friends and relatives charge about 20 per cent per annum. The wholesale stockists of Bakhira provide the raw material on loan and no interest is directly charged but 'manufacturing wages' given in exchange are reduced to 20 to 25 per cent, which comes to 60 per cent per annum.

Profitability

The 'manufacturing wages', received by the manufacturers in exchange of their products with old utensils amounts to Rs. 300 to Rs. 700 per quintal for different finished products. The differential or 'manufacturing wages' include different types of expenditure incurred on fuel, wages, electricity in the production process (exculding the price of raw material) and net profit of manufacturers. The total expenditure comes to Rs. 120 to 400 per quintal of the products. The net profits gained ranges from Rs. 170 to Rs. 335 per quintal of products. If the production increases further, the present workers may get employment throughout the year and the number of employees also may go up.

Finance forms the main hurdle for their growth and if the banks can advance loans upto Rs. 10,000 at lower interest rate, the production would go up.

Along with increase in the production new avenues of marketing should be explored. Also the products are known for their durability and are popular among rural population. So there is a lot of scope to expand the market to the towns of other districts like Deoria and Faizabad.

To increase the production, the supply of pure raw-material like copper, zinc and nickel at control prices to the manufacturers is necessary, as it is done at Mirzapur and Moradabad, the famous manufacturing place of household utensils in U.P. A branch of the Mineral and Metal Corporation of India should be established at Bakhira to solve the raw material shortage.

Dr. M. S. Swaminathan

DR. M. S. Swaminathan, the Acting Deputy Chairman of the Planning Commission, is an eminent agricultural scientist. His role in ushering in a Green Revolution in India is universally recognised.

Born on August 7, 1925, Swaminathan was educated at the universities of Travancore and Madras, Indian Agricultural Research Institute and also at the Universities of Cambridge, Wageningen (The Netherlands) and Wisconsin (YS). He took his Ph.D. from Cambridge and subsequently received D.Sc. honorary degree from more than a dozen universities in the country and fellowship from eight national and foreign scientific academies. He has published over 200 research papers in national and international journals and has many scientific contributions to his credit.

Dr. Swaminathan has received seven scientific awards including the Borlaugh Award, and also Padma Shri and Padma Bhushan awards from the President of India. He also received the Magsaysay Award for Community Leadership in 1971.

Dr. Swaminathan was Director General of Indian Council of Agricultural Research, and Secretary, Department of Agricultural Research and Education 1972—1979) and Secretary, Ministry of Agriculture (1979-80). He is Member (Agriculture) Planning Commission and its Acting Deputy Chairman since April 3, 1980. □

A Portrait Of Rural Poverty

C. Harichandran *

THE large family size is one of the maladies affecting the house-holds of the weaker sections. As a result of the oversize family they are unable to come out of the poverty cycle. The situation is universally the same all over the country. Here is a study of the conditions of the weaker sections in a panchayat in Tamil Nadu.

The Vallam Panchayat is one of the 19 constituents of the Tenkasi Panchayat Union in the Tirunelveli District of Tamil Nadu. It consists of three revenue villages namely Vallam, Navalkadu and Kunnakudi, but the later two are un-inhabited. The panchayat has 592 households. The major castes of the panchayat are the Muslims, the Moopanars, the Thevars, the Nadars, the Asaris and the Vellalas.

The panchayat had a population of 1,759 as per 1961 census. It increased to 2,173 in 1971, 2,646 in 1979. Of this male population as per 1971 data was 1,067 and the rest females. The working population was 1,170 and together 310 persons engaged in the crafts and industries and petty trades. In the service sector only 20 persons were employed. The rest of them were cultivators and agricultural labourers. The total area of the panchayat was 483.43 acres. Out of the total number of 592 households in the panchayat 43 were reported as landless. The total area was divided into large number of fragments. The net cultivated area was 412 acres which accounted to 85 per cent of the total area of the panchayat. The institutional and cultural life of the village is not rich. There is only one primary school in its area. There is neither a cooperative society nor a marketing centre organised for the service of the people.

The survey covered 50 per cent of the households, out of the total of 952 house-holds, in the panchayat. The actual number of house-holds surveyed were more, but, for our analysis households above the annual income level of Rs. 3,600 were ignored. The respondents consisted of cultivators, agricultural labourers, petty traders and a few scavengers and peons. Those who were employed as teachers etc., had more annual income both from their occupation and other sources. A family whose income from all sources which was less than Rs. 3,600 was taken to be the family belonging to the weaker section. Annual house-hold income was taken as the limit under the assumption that every family on an average has five members and a per capita annual income of Rs. 720 for every family was necessary which would meet the minimum requirements of the family.

Large family size is one of the maladies afflicting the house-hold of the weaker sections. As a consequence of the family oversize they are unable to come of the poverty cycle. On an average every household has a strength of above five members. It has come to light that our family planning efforts have not made much impact in the countryside in general and among the weaker sections in particular. A religionwise analysis reveals that 86 per cent of them were Hindus, 3 per cent Christian and the rest Muslims. Only 24 per cent of them have studied upto elementary level, 4.6 per cent have higher elementary education and about 1.4 per cent high school and technical education. The rest about 63 per cent of the respondents are illiterates. Though most of the respondents have no formal education they recognize the importance of education and hope to improve their social status etc. only through education.

In the rural sector land is regarded as important though not as only indicator of economic status. Nearly 7 per cent of the respondents are landless. Their dwelling places are in 'porampokes' and Kudikidappu'. 42.74 per cent of the respondents have lands upto 10 cents. There are even house-holds with 3 cents of land. About 36 pre cent of the respondents have lands upto 50 cents. The rest of them possess more lands but less than 2 acres.

Income and Expenditure of the House-holds

An analysis of the income pattern reveals that 17.71 per cent of the households have an annual income below Rs. 2,000. The bulk of the house-holds viz. 56 per cent have income levels between Rs. 2,000 and Rs 3,000. The rest of the house-holds are reported to have derived income above Rs. 3,000 but below Rs. 3,600. When analysing the association of family size with the house-hold income, for most of the households, the per capita income appears to be very less. It is evident that on an average the per capita annual income is less than Rs. 300 per annum for a large number of house-holds. Those house-holds reported to have higher income, generally have small size family coupled with incomes from other sources.

It is of vital interest to examine the pattern of expenditure of the house-holds. Generally the approach is to analyse how much different families spend on meeting their actual expenditure on commodities in obtaining what is considered necessary for the maintenance of health and working capacity.

It is evident in the survey when analysed into three different groups, only 18 per cent of the house-holds spend below 70 per cent of the house-hold income on food items. Nearly 54 per cent spend between 70 and 80 per cent, whereas 28 per cent spend, above this per cent of the income on food. It is clear from the survey that protective food items like milk, egg, meat, fruits and edible oils are rarely used. The food consumption standards of the majority of the house-holds are really poor. About 45 per cent of the house-holds are covered between the per capita food consumption level of Rs. 25 and Rs. 35. About 22 per cent of the

*Research Fellow, Gokhale Institute of Politics and Economics, Pune.

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house-holds have a per capita food consumption below Rs. 25 per month and with this level of expenditure they cannot have even the bare minimum requirements. It is needless to emphasise here that food consumption standards are not only far below the minimum level but also deplorable. A poor diet pattern greatly affects the health conditions of the house-holds.

It is apparent from the above analysis that food items form a substantial percentage to the house-hold expenditure. Poverty is more due to large number of households. There is close relatonship between family size and per capita expenditure which appears to be inverse in character.

Saving, Indebtedness and Housing

A very small per centage of the people can afford to save a small part of their income. Saving is that part of their income not spent on consumption. In other words it means income minus consumption. The survey reveals that on an average for every 7 house-holds only one has got the capacity to save. Only 14.2 per cent of the respondents have savings during the last one year.

Out of the total respondents surveyed 37 per cent indicated that there are improvements in their socio economic conditions in recent years. About 20 per cent reported that there is only microscopic development. In case of another 43 per cent there is no development at all. Generally, most of the house-holds in the rural sector are afflicted by debt. The All India Rural Credit Survey has estimated that 70 per cent of the agricultural families are ranging from Rs. 200 to Rs. 3,000. When the per capita income is below the critical minimum poverty level the gap between income and expenditure is filled by borrowing or by reducing food requirements.

Regarding the sources of borrowing the general impression is that money lending at village level and in towns is whithering away from the scene day by day. Actually most of the poor villagers are still in the clutches of money lenders. Also for the rural poor the easiest and simplest way of getting credit is from money lenders. Of the total indebted house-holds 48 per cent have borrowed from village money lenders, 22 per cent through land mortgages, 10 per cent from relatives and neighbours and the rest from banks and cooperative societies.

Needless to say that housing is one of the necessities of man. Good housing contributes to health, efficiency and productivity of the society and to greater extent reflects the level of economic development of a society. A majority of the house-hold live in simple houses both tiled and thatched. Of the total respondents surveyed 62 per cent house-holds live in thatched houses and huts. The rest of them live in tiled houess. The landless people live in "porampokes" and other lands as "kudikidappu". Another problem is that in many cases more than one family live in a house under the available facilities.

Social Problems

The social and cultural life of the majority of households are disheartening. They have little social life and enjoyments. It doesn't mean that they are unaware of their wants in this respect. Some of the respondents are reacting against some aspects of the traditional society which hampers development.

When asked whether they are respected in the society and are able to participate in the various activities viz. religious, institutional, cultural, etc. majority of them are of the view that with their poor economic and educational background they cannot actively participate in the social process of development. Since the change and growth process is rather slow the respondents have the feeling that they need a big push. Such an awareness is bound to grow in future and is a healthy sign of change and development. □

Development Of Fisheries In *Man*

Rajiv Ranjan Prasad*

IN the north-west Bihar, particularly in the districts of Champaran and Muzaffarpur, due to shifting courses of the rivers several horse-shoe shaped water bodies have been created. A popular term *man* is used to connote such water areas. A *man* is an ox-bow lake. In Bihar, there are 59 *man* covering an area of 20,000 ha. Most of the *man* belong to revenue, or forest department of the State.

The *man* of Bihar have their origin from the rivers like the Gandak, the *Burhi* Gandak and the Dhanauti, all tributaries of the Ganga. The *man* have different shapes and sizes—some are U-shaped, others oval or loops-shaped. The area varies from a few hactare to 800 ha. The *man* are perennial in nature. They are either rain-fed or river-fed. The margins of the *man* are utilized for paddy cultivation.

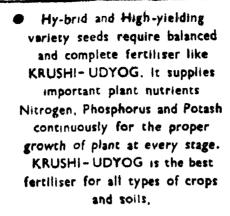
Flora of the *Man*

They are thickly infested with various aquatic plants. The extent of weed infestation vary from *man* to man, but, on an average more than half of the area of each is infested with weeds.

These plants not only create hindrance in fishing operation, but also consume to a great extent the nutrients available in the water. Due to regular decay of these plants in the *man*, their beds are coming up. This process is known as 'aging' of the *man*.

The fish population of the *man* comprises both lotic and lentic species. The species of air breathing fish like *Channa* sp, *Heteropneustes* sp, *Clarias magur* and *Anabas testudineus* and miscellaneous fish like *Chanda* sp and *Puntius* sp are more or less ubiquitous and dominant, whereas major carp (rohu, catla, mrigal and calbasu), *Notopterus* sp, *Mystus* sp and *Mastacembelus* sp are also well distributed. On an aevrage, the following percentage of catch composition constitute the *man* fishery of Bihar.

Major carp—10	Feather backs—10
Minor carp—15	Catfish—20
Murrels—30	Crustaceans—5

*Fisheries Extension Officer, Fish Farmers Development

Thus, the air breathing fish, by and large, dominate the fishery. It may be due to their autochthanous nature. The percentage of major carp fishery has come down considerably. It may be due to lack of seed stocking. Prior to the advent of flood protection measures, the *man* used to get autostocked with riverine fish seed from flood water. But this phenomenon ceased to occur due to the construction of protecting bundhs. This has increased the quantity of weed and other fish. Sudden influx of flood water used to check the growth of marginal weeds due to inundation. Fish production from the *man*, at present, is very low (10 kg/ha/yr), but, when stocked extraneously, the production has increased tremendously.

Developmental Measures

The ever-increasing shortage of fish could be substantially met by developing fish culture in the *man*. To exploit the *man* properly, the foremost task will be to excavate the inlets and repair the sluices. It will facilitate autostocking. The sudden flushing prevents growth of obnoxious plants. The marginal land, at present, are utilized for paddy cultivation by the farmers. The farmers always keep vigil on the sluice and whenever water rushes suddenly, they put earth in the way. In doing so, the area of the *man* is gradually decreasing. To prevent this, the marginal land can be converted into fish farm to get more fish.

Fish production from any water body can be increased many folds if it is properly and adequetly stocked with quality seed. Stocking of fish seed extraneously was not in vogue due to auto-stocking but, when stocked in Amwan *man*, the fish production increased from 12 kg/ha to 51 kg/ha/yr. So, it is imperative to stock them with asiatic carp. At present, cat fish and murrel dominate the *man* fishery. It appears to be difficult to eliminate them completly from the *man*, but, selective fishing, if employed, can minimise these fishes.

The problem of weed, particularly submerged one, could be minimised by the introduction of grass carp (*Ctenopharyngdon idellus*). Sudden flushing of flood water appears to be a better method for the control of marginal weeds. Floating weeds can be removed manually or chemically.

The future of *man* fishery is very promising. If they are properly and adequetly stocked and exploited., our fish production will go up. Also, well maintained *man* can attract tourists and anglers, as they can form parts of our flora and fauna. □

Wood-based Industry Of Hoshiarpur

Jagrup Singh Judge*

THE wood-based industries are the oldest industries of Hoshiarpur in Punjab. Some of the units are in the small-scale sector, and others are cottage industries. These industries play a crucial role in the economy of Hoshiarpur. All these units came into existence before independence.

The fast growth of these industries, like saw mills, pawa-making, furniture-making, ivory (plastic) inlay and rosin and turpentine industry, cannot be ignored. Although all these industries engage skilled or semi-skilled workers, the ivory (plastic) inlay industry and furniture-making industry cannot be run by unskilled workers.

The capital equipment of these units consists of simple hand-operated tools and implements. These, together with the inherited individual skill of the artisan, constitute the basis of productive activity. The calculation of the value of the tools and implements presents a problem not only because the artisans just do not know their value, but also because in several traditional industries, they get handed down from generation to generation. So it is difficult to compute the value of the capital investment in a given establishment. Every new worker has to invest at least Rs. 2,500 on tools to start new household work.

The main reason for the situation of the wood-based industries at Hoshiarpur is the availability of skilled labour on cheap wages and the abundance of the shisham wood. The partition adversely affected these industries. Before the partition, most of the workers belonged to the Muslim community. After the partition the industries had to face the problem of the paucity of the skilled labourer, as most of them migrated to Pakistan. But the deficiency of the skilled labour was fulfilled within four to five years, as many Harijan families engaged themselves in this work.

Upto 1973-74, these industries were not facing any major problem, but presently they are again beset with the problem of the non-availability of the skilled workers, as many of them are emigrating to the Gulf countries. The monthly earnings of the skilled workers in the Gulf countries range from Rs. 3,500 to Rs. 7,000 according to their skill and capacity to work. In India, their monthly earnings range from Rs. 250/- to Rs. 600. The fantastic wages earned by the workers increase the purchasing power of their parents in India and enable them to purchase luxury goods including the products of wood-based industries.

The increase in demand created maladjustment between the demand and supply and became one of the major causes of the increase in the prices of these goods. The major component of the production cost of the products is labour wages. However with the migration of the skilled labour to the foreign countries, the supply of the skilled workers to these industries has decreased to a great extent. The wage rates have shot up many-fold. Consequently, the prices of the products of these industries have gone up. During the last three years of the prices of the ivory (plastic) inlay industry products have increased by 40 per cent. The same is the case with the products of others wood-based industries. Besides, the quality of the products has also deteriorated.

*Freelance writer

However, the unskilled labour is available by the thousands. Three factors hinder to provide skill to the un-skilled workers. First, proper facilities are not available to train more and more workers. Only limited seats are available in the ITI.

Secondly, due to the caste system pravailing in India, the people belonging to the Mistry caste alone are interested in acquiring the requisite skill. Moreover, the skilled workers hesitate to make apprentices from other castes. Their behaviour norms are diametrically opposite with the apprentices of the other castes. They happily exploit them.

Thirdly, as the demand for the carpenters in the Gulf countries has not slackened, every apprentice after getting primary training in the use of the tools, is interested to go abroad to earn hefty wages. Many of them make arrangements for their emigration, while only a few remain to cater to the requirements of the local firms.

But all the problems can be removed easily. The industrial training institutes provide skill to the youth to set up their own units. The pressing need for new apprentices has made the people to ignore the caste system. In search of jobs, the people of other castes have started to acquire the skill to do the carpentry work. Many people are getting the training to go abroad. Others want to change their occupation, from the unskilled physical worker to the skilled labourer, where the wages are higher.

To conclude, it is noteworthy that the migration of the skilled workers has changed the fate of Hoshiarpur. It has not only created chances for the new workers to get skill, but has also increased the purchasing power of existing ones. It has helped in removing the evil of casteism, both by change in the occupation in India and by living together of different castes in the Gulf countries. As there is usually construction work in the Arabian countries, the skilled workers will return after completing their contracts within a period of time. With the huge savings they will set up their own units at their residential places, giving a fillip to the wood-based industries. The owners of the existing firms are not yet afraid of the competition from the new firms. They argue that with the coming of new firms into existence, their market will prosper. The demand is already exceeding supply many times. Some wood-based industries, like the ivory inlays, are foreign exchange earners, and such new firms will contribute to maintain our foreign exchange surplus as well. □

Wealth from Sugarcane Waste

Ram Vichar Sinha*

IN the process of development, a huge quantity of industrial by-products or wastes are generated. A good number of such wastes can be profitably recycled and utilised for creating more wealth, and employment opportunities, especially in rural areas.

In spite of the rapid progress achieved in the sugar industry, its by-products continue to remain neglected. The fluctuation in the supply of the by-products and the lack of viable technology are the limiting factors for the growth of the by-products in the recycling of the by-products of the sugar industry. Now the realizations from the by-products of sugar represent about 1 to 3 per cent of the value of sugar.

While delivering the Bhaikaka Memorial Lecture at Pune, the CSIR Chief, Dr. Y. Nayudamma said that, if the by-products of sugar factories, namely bagasses, molasses filter-mud, boiler ashes and cane tops, were put to right use they could generate new hope for the sick sugar mills and job opportunities for thousands of the unemployed. The sugar technologists have pointed out that if all the by-products are utilised in a sugar factory, its profitability may increase by as much as 50 per cent depending on the products which it chooses to adopt from the by-products.

Bagasse

The by-products available from the sugar industry are bagasse, furnace ash, final molasses, surplus electricity and filter mud. Except furnace ash and electricity, each of these by-products is a feed-stock for one or more industries. Next to sugar, bagasse is important whereas molasses and filter mud (press mud) occupy third and fourth positions respectively. Bagasse is the residue left after the juice extraction from sugarcane. Of all the by-products the bagasse production is the largest and forms 30 to 35 per cent of the cane crushed per annum.

*Head, Department of Economics, Gopeshwar College, Hathwa, Bihar.

Bagasse has about 50 per cent moisture and is used as fuel to generate steam. Dry bagasse, in general, contains 40 per cent cellulose, 30 per cent pentosans, 20 per cent lignin and the balance 10 per cent being sugar wax, minerals, dirt and others. The different components of bagasse can be used to manufacture products like active carbon by making use of cellulose. Hydrolysis of pentosans gives furfural which is used for a variety of purposes such as the manufacture of synthetic fibre, synthetic resins, refining of lubricating oils and so on. The paper industry needs about 80 lakh tonnes of bagasse because of its high cellulosic content. This quantity forms 38 per cent of the total estimated production 210 lakh tonnes of bagasse by the end of the Fifth Plan. The surplus bagasse may be used as a raw material for the manufacture of insulation board, corrogating medium, linear board and various grades of paper including packing, wrapping, printing, writing, toilet tissue, facial tisue, toweling and even newsprint. The pith of cane may be used as fuel in sugar factory.

Research in Bagasse Utilisation

The Forest Research Institute, Dehra Dun, has been doing research work on the utilisation of sugarcane bagasse in pulp, paper and paper board industry. The National Sugar Institute, Kanpur has done considerable work in the production of furfural and in the manufacture of straw boards from bagasse. The institute has perfected a method to convert bagasse into bio-gas and bio-manure which go a long way in the process of rural uplift. For this the sugarcane tops, leaves, trash, bagasse press-mud and others are mixed in different proportions with agricultural wastes according to their availability and are enriched with small quantities of nitrogenous and phosphatic nutrients. The bio-manure so obtained is a very useful organic manure, rich in nutrients like potassium, calcium, phosphorus, nitrogen and humus and so it compares well with the farm yard manure.

Chemicals from Bagasse

Of late, bagasse has become an important raw material for the manufacture of some commercially important chemicals such as alpha, cellulose and plastic materials. Furfural has a good number of uses in the chemical industry. It is now mainly used as a selective solvent for refining high quality lubricating oils for wood resin and vegetable oils. The alpha cellulose is highly purified and mainly used in rayon acetate fibres, cellophane, plastics, explosives, photographic films and fine papers. The glass made of the Indian bagasse ash is chemical resistant glass which is useful in making containers, fibres etc. As much as 160 lakh tonnes of bagasse is now going waste which can otherwise be utilised to produce valuable glucose and ethyl alcohol. Research is being conducted at the Indian Institute of Technology, Delhi to produce ethyl alcohol from bagasse to use ethyl alcohol in combination with petrol as a fuel for automobiles. Proper utilisation of the by-products of cane-sugar industry can be of much help in solving the problems of sick sugar units, particularly in Bihar and U.P., by reducing the cost of production of sugar. In India, further development of bagasse-based paper industry may in the long-run, prove to be an important step for a more economic utilisation of bagasse, particularly in Saran region of Bihar. The Japanese team which visited India a few years ago had examined the problem of utilising the bagasse as a raw material for paper industry with particular reference to Bihar. They found out that with the bagasse released in the sugar mills in Bihar as much as 1,20,000 to 2,50,000 tonnes of paper could be manufactured. So they suggested alternative methods for complete utilisation of the by-product. While considering the utilisation of bagasse on an all-India basis, the Gundu Rao Committee had observed that, with the saved bagasse as raw material three paper factories could be run in West U.P., two in East U.P. and two in Bihar. There is ample scope for bagasse-based paper projects in many other regions of the country. The factories which are far away can convert the saved bagasse into pulp and send it to a central paper factory or set up its own small cardboard, particle-board or chip-board plants.

In Bihar the sugarcane has a high bagasse per cent of over 34 during the last several years. Particularly in the old Saran district factories in Bihar the bagasse per centage is still higher, for example, it was 36.20 per cent in 1973-74, 36.18 per cent in 1974-75, 36.29 in 1975-76 and 35.66 in 1976-77. In other units of Saran, the bagasse per cent ranges between 35.06 to 37.05. All this shows that bagasse per cent in Saran sugar units is appreciably higher when compared to other parts of the country. The fibre per cent of cane has had a range between 16.22 to 16.94 in different factories of Saran during the period 1973-74 to 1977-78. In spite of higher percentage of bagasse and fibre most of the bagasse is burnt in boilers of the factories and the rest is used only to produce boards. In India we are importing more than 50 per cent of our newsprint requirement, from foreign countries. The paper demand is the country has far exceeded the output. The requirement went up to 11 lakh tonnes by 1978 from 8.60 lakh tonnes in 1975 but the output rose to only 8.96 lakh tonnes from 8.30 lakh tones during the period. The increased demand for paper and paper products has compelled the Government to go in for imports on a large scale. In 1976, the imports of paper were of the order of Rs. 61.1 crore, and in 1977, Rs. 81.7 crore. Our forest resources, particularly bamboo, are fast depleting because of the mindless felling of bamboos and trees in Madhya Pradesh, West Bengal and Orissa. Here comes the importance of bagasse as a raw material for the paper manufacture. Bagasse from sugar mills can serve as a good substitute for limited quantity of bamboo, wood sabai grass, etc. as raw material for the paper industry. Apart from all his, there are various other advantages namely :

1. It is available at one place in a sugar factory. Consequently, the cost of collecting, carriage, clearing and crushing etc. is low.
2. It is a waste material which when put to a much better use than mere burning in the boilers has many more economic advantages.
3. It can be easily baled and stored without any material deterioration in the fibre value of bagasse.
4. The process of conversion of bagasse into pulp is easier.

Government is also encouraging the modernisation of paper units by extending soft loans at nominal interest of 7.5 per cent, to be repaid over a period of 15 years. Favourable debt equity ratio for setting up bagasse based newsprint and paper plants, excise exemption on the writing and printing paper made with

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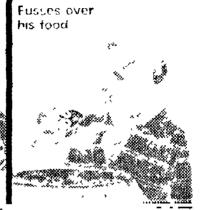
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bagasse and extension of financial aid on priority basis for establishing such units are some of the policy measures envisaged by the Government to attract investors setting up bagasse-based paper projects in the country. On a rough estimate, the eight sugar units of old Saran can produce about 28,06,950 quintals of bagasse annually. Thus all the 29 sugar units of Bihar State have considerable quantum of bagasse production. So at least 30 per cent of saved bagasse in the State wil go a long way in fulfilling the requirement of raw material of one or two newsprint plants in the State. □

Onion Production in Nasik District

S. J. Patil, M.P. Dhongade and B. J. Hinga*

NASIK district of Maharashtra State is will known for onion production throughout the country. The suitable climatic conditions soils, perennial irrigation, road and rail transport facilities, enable the cultivators to undertake onion cultivation on large scale. The area under onion cultivation in Nasik district alone is 20,300 hectares. The figure for the entire State is 50,300 hectares. Thus, of the total area under onion in the State, 40.36 per cent is in Nasik district alone.

The onion crop can be grown in both kharif and rabi seasons. It is the principal cash crop of the farmers in this area. It fits well in the rotation as it is a short duration crop. However, uncertainty of prices and adverse climatic conditions considerably affect the income of the onion growers. Inspite of this, farmers in this district have been growing this crop on large scale.

A study of economics of onion cultivation was taken up in the year 1975-76 which was a normal year as far as the crop was concerned.

Methodology

Based upon the primary information of acreage under onion crop in different tehsils of Nasik district, the random sample was selected on an area proportionate basis with tehsil as the primary unit, village as the secondary unit and the onion growers as the ultimate unit. In all, 80 cultivators spread over in 7 villages formed the total sample. The data were collected by survey method.

The concepts of Cost A, B and C usually adopted in the farm management studies were used in the analysis of data.

Per hectare cost of cultivation

Onion crop is a labour intensive crop. The operations like transplanting of seedlings, weeding and harvesting in particlular, require a large amount of labour. The per hectare total number of male and female labour days required for the cultivation of onion worked out to 102.63 and 296.14 respectively. In case of male labour, the proportion of family labour was more compared to that of hired labour. However, the women labour presented a different picture. The proportion of hired units was nearly five times that of family units. The female labour is mostly used for transplanting, weeding and harvesting operations which are more labour intensive in onion crop. This has reflected upon the cost of labour in the total cost of production. The cost of human labour item alone comprised 20.57 per cent of the total cost.

The inputs such as seeds, seedlings, manures, fertilizers and irrigation were the items which required sizeable expenditure. These four items together formed 44.57 per cent of the total cost. The produce being bulky involved high expenses on account of transport and marketing (13.03 per cent). The per hectare Cost A and C worked out to Rs. 4020.25 and Rs. 4,929.72 respectively. The per hectare yield worked out was 121.82 quintals. The high returns were due to remunerative prices prevailing during the year under study.

Net returns

The Cost A, B and C worked out to Rs. 4020.25, Rs. 4610.30 and Rs. 4923.72 respectively. The gross returns came to Rs. 7671.42. The crop was in profit mainly due to unusually good prices received by some of the cultivators who could sell their produce at the beginning of the season. The average per quintal price realised by the onion growers worked out to Rs. 62.97 and the per quintal cost of production came to Rs. 40.42. The per quintal margin received by the onion growers was Rs. 22.55. The input-output ratio worked out to 1:1.56.

Though the onion crop is an important cash crop of this district, it is labour intensive and bulky in nature. It is also subjected to uncertainty in prices and risk of low yields due to adverse climatic conditions. In view of this, it is necessary to have stability in its prices. Farmers do take proper care but they can benefit only if prices are remunerative. □

*Research Associate and Professors of Agricultural Economics, Mahatma Phule Krishi Vidyapeeth, Rahuri, District Ahmednagar, Maharashtra.

Keeping Eggs Fresh During Summer

A few precautions taken on time can save the poultry eggs from spoilage in storage and transport during summer.

Eggs should be collected at least 3 or 4 times during the day to save the spoilage of eggs in the poultry house because of high temperature and humidity.

Before marketing eggs, they should be kept in a dry and cool place, of 50°F and 80-85 per cent relative humidity. Storing may preferably be done in egg-trays with the broader ends of eggs up. This way eggs can keep fresh for 7 to 10 days.

In villages, eggs can be stored in an earthen pot coverd with a basket and a wet gunny over it. This brings down the temperature and maintains the desired. humidity. The earthen pot with lid can be kept burried in moist sand up to the brim.

Money from Honey

Dinanath Dube*

INDIA could be a land flowing with milk and honey. That it is not, is not nature's fault alone. May be it is due to tardy application of technology to agriculture and its allied lines. Steel plants, fertiliser factories, oil refineries, power stations are among the more easily recognised symbols of prosperity and progress. Hence in many developing countries, they rank high in the list of desired acquisitions. On the other hand, a larger catch from sea, more flourshing crops, a higher yield of milk and honey lack lustre. If our aim of development is to provide a rising standard of living to the people, these may contribute more directly, speedily and with less expenditure of resources to a higher standard of consumption.

For instance honey which is one of the best sources of heat and energy gives over 3,500 calories per kg. Its chief merit however lies not so much in the calories of heat it generates, but in the wholesome nourishment it provides. Energy value of one kg. honey is estimated to be equal to 13 litres of milk, 8 kg. of plums, 10 kg. of green peas, 12 kg. of apples or 20 kg. of carrots.

Bees not only provide honey and wax, but also enrich and increase the crop yield. The most important role of the honey bees is their immense utility in crops, pollination of our oilseed pulse, vegetable and fruit crops. In countries like the U.S.A., Sweden, West Germany, the Soviet Union and other East European Countries, it has been established that the value of increased crop yields due to planned bee pollination is over ten times the value of honey and bees wax produced in our country This method was adopted in other countries long ago, but in India no attempts were made to use bees for pollination. Now the National Commission on Agriculture has recommended that agriculture and forest departments and the Khadi and Village Industries Commission should jointly take up the programme of harnessing bees for cross-pollination for intensive compaign. The Central Research Institute, Pune has established that bee pollination increases yields by 8 to 83 per cent. It is observed that about 80 per cent of fruit and vegetable crops as also a number of seed crops depend for fertilization on insects among whom bees are the most effective pollinators.

Bee keeping has been practised in India since times immemorial. Honey is a well known vegetable product manufactured by insects mainly bees, who store it in combs as reserved food for their own consumption in winter. The insect collects nectars from flowers of plants and juice of ripe fruits and stores them in that parts of its body known as honey sac. Then the succrose of nectar is converted into honey.

Extraction of honey frcm natural calories and its various uses have been known in India for centuries but, scientific rearing of bees and modern methods of extraction of honey came to limelight after 1950. Credit goes to YMCA Martandam and Dr. Hatch for modern bee-keeping in India in early 1930s. After 1954 the Khadi and Village Industries Commission

*Freelance Journalist, Kota.

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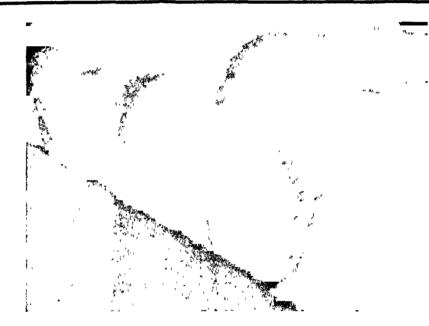
did pioneering work in developing this agro-industry in the country. Today the country produces about 25 lakh kg. of honey valued over 2.5 crores annually.

Bee-keeping requires very little investment, it benefits agriculture and horticulture both. It can be developed as an excellent hobby, providing pleasure and profit, gainful part-time as well as full-time employment. The earning goes on increasing as the bee-keepers acquire proficiency. Many bee-keepers are keeping 50 or more colonies and are earning an income between Rs. 3,000 to 10,000 annually. A hobbyist can start with a couple of hives, a honey extractor, a smoker and a set of minor accessories The cost of bee box ranges from Rs. 60 to Rs. 80 depending upon its type and area. A full set, say five boxes together with essential accessories may cost between Rs. 400 to Rs. 500. Subsidy is also given by the Khadi and Village Industries Commission to economically poor people. Normally it takes two years to start a full-fledged profitable honey production centre. With efforts of the Khadi Commission, this village industry is now well established in Kerala, Tamilnadu, Karnataka, Bihar, Assam and is fast catching up in West Benga, Andhra Pradesh, Uttar Pradesh, Himachal Pradesh and ammu and Kashmir.

In India, bee-keeping has tremendous potentialities. According to the agro-forestry experts in our country semi-and zones pose high potential for honey production. With diverse environment and inexhaustible floral resources from natural vegetation and cultivated crops, India can easily support millions of bees colonies adopting improved technology.

Recently in the F.A.O.'s annual review, Prof. G. F. Townsend of Canada said "It may not be oil or gold but there is a sweet profit made from honey." There is a world honey shortage and prices are high. Honey now goes for about $ 1,000 a tonne compared to $ 300 in 1969 and it is still rising. The F.A.O. report said that the reason for rising prices is that world honey production is not keeping with demand. Can our country meet the challenge ? Of course, it costs less to eat sweet and to earn better. □

Economics of Ram Lambs Rearing

K. Satyanarayana*

ANDHRA Pradesh had a sheep population of 70.65 lakh in 1977. The most important of the State are Nellore, Deccani and Bellary, femous for quality meat and wool. Of late, a declining trend in sheep population is observed in the State. From 1961 to 1972 there were about 80 lakh sheep but a steep decline was observed during the period 1972-1977. The reason lies in the mindless slaughter of the animals without confining it to the unproductive old sheep Ram lambs are generally marketed for slaughter at the age of 3-4 months, when these lambs weigh 8—10 kgs. The production of meat is estimated at 60 to 65 per cent of the body weight of the sheep. About half of the ram lambs produced every year are butchered for meat at the tender age of 3-4 months. The growth rate of ram is more rapid upto 6 months period more or less uniform upto 12 months. In order to achieve the twin objective of obtaining additional tonnage of meat the employment opportunities, it will be beneficial to slaughter the rams only after they attain an age of 10—12 months when they weight 20—25 Kgs

*Agricultural Development Officer, Syndicate Bank Hyderabad

An individual in dry tracts can take up fat-tening of 50 ram lambs of 3-4 months age for a period of 8-9 months in the areas where vast Government waste lands, community grazing land are available for feeding the lambs. Ram lambs are also grazed on farm resides and farm by-products. An additional employment for a period of 8—9 months can be created through the enterprise for able-bodied people in the villages. This also contributes for additional tonnage of protein rich meat and other by-products employment to the people dealing with these products in the State. It has been amply proved that rearing of 50 ram lambs for 12 months involves an expenditure of Rs. 7825 whereas by selling them the income is Rs. 10,300 i.e. a clean margin of Rs. 2475.

This requires a planned approach. The sheep rearing units in a village shall have to be planned depending upon the extent of Government waste lands and the extent under forests. The beneficiary has to replace the ram lambs every year/season. To en-

able him to build up a sheepherd over a period of 4 to 5 years, the beneficiary may go on adding 3-4 sheep from the surplus generated from the income of the ram lambs rearing scheme. The beneficiary is to be educated extensively the need for rearing the ram lambs ram up to the live weight of at least 20 kgs. Early born lambs may be selected for fattening and castration shall be done in early age of ram lambs for improving the grains of the muscle making the meat tender. Though one individual can look after 50 rams, it is the common practice that rams are generally reared in groups as it is essential to have a minimum of 2 units for easy rearing. The enterprise requires capital in the form of short term loan. Hence, arrangements shall have to be made to provide institutional finance to the prospective enterpreneurs ☐

Manpower Planning in Development : A Case Study of Manipur

L. Krishnamangol Singh *

THE field of manpower planning is to be linked to the economics of education because it is the educational sector which supplies the skilled manpower. It has also to be recognised that while making projection for manpower requirements of the country, more detailed consideration has to be given to certain sectors of skills, particularly those in which the development requires a substantial degree of capital investment. In the specified areas of training and aptitudes, greater care has to be exercised to match the estimated requirements and availability of manpower as closely as feasible. If the available skilled manpower in any one of these sectors falls short of requirements, it can seriously jeopardise the success of the development sphere in which that skill is required. On the other hand, if the available supply of manpower exceeds the demand, one faces a situation of unemployment involving persons whose talents could otherwise have been put to better use in the national economy.

In view of the need for accelerating the economic growth of the agrarian economy of Manipur and also in the wake of the rapid growth of population and unemployment the necessity for manpower planning is strongly felt. It would be interesting to observe the growth and composition of population in the state and also the complex unemployment situation of assessing the immediate manpower planning at the regional level.

In 1951, the population of Manipur was 5,77,635 which increased to 7,80,057 as per the 1961 census. Again in 1971, the population of the state was 10,72,753. The present population of the state is estimated at 13 lakh. Thus the population of the state is growing at a fairly rapid pace and is likely to be a little over 15 lakh by the end of 1983. Regarding the composition of population, it can be pointed out that a sizeable proportion of population, about 42 per cent belongs to the age-group 0-14 years. The population in the age-group 15-55 constitute about 51.41 per cent and most of the workers are drawn from this age-group. Obviously the state has a large number of dependants.

*Research Scholar J.N.U. Imphal.

It is an interesting phenomenon that all those who were already in the age-group 0-14 would gradually enter the labour force (15-55) within the next one and a half decade or so. In other words, they would seek employment during this period. The state is, however, facing the problem of unemployment both for educated and uneducated. The high degree of unemployment among the educated class and also the rapid growth of population signify immediate necessity of manpower planning and accelerating the rate of economic development.

It seems that the state has no adequate manpower or educational policy to supply the manpower needs of the economy of Manipur. On the contrary, there has been rapid expansion of educational institutions in Manipur giving liberal or general education. It is a fact that the existence of large-scale unemployment among the educated youths is a reflection of over production of educated persons without reference to the demand for them in the labour market. Turning out graduates without reference to the demand for them in the labour market also causes frustration among the youths. Therefore it is necessary that our educational system should be so modified as to supply the manpower requirements especially in trade and commerce, industry, transport and communication etc.

The process of human resource development requires a long period policy because skill formation is a time consuming process. The crucial factor in human resource development is the development of top skills. For instance, to train a person as an engineer requires a period of education of about 15 to 18 years. Likewise skilled formation of high level manpower also requires long gestation period. Therefore, a country has to decide in perspective and then frame its educational policy so that it can produce educated manpower in the desired lines of productive activity.

The Manpower planning or planning for manpower requirements or supply of skills is not likely to yield optimum results unless it is linked with other programme of economic development of the country. Therefore, an under-developed country has to do two things to accelerate the rate of development. First, it should step-up the rate of investment in physical capital and secondly, it should also increase the rate of

investment in human capital formation. Consequently, human resource development becomes competitive to physical resource development in so far as it imposes a demand on the scarce resources available for economic growth.

An important problem to which an under-developed country or region should pay adequate attention is that the process of human capital formation has to be correlated to the process of physical capital formation. In its zeal for developing skills, a country should not train a larger supply of manpower than is required by the needs of its expanding economy. In other words, the process of balancing the demand and supply of manpower in different sectors of the economy is of strategic importance.

According to the Institute of Applied Manpower Research, the requirements of skilled manpower for the most important sectors of the economy of Manipur during the Fifth Five Year Plan is around 4,000 of which Engineers both degree and diploma holders account for over 1,000. The assessment of the Administration comes to around 9,000 additional heads during the period. We have to prepare for meeting the requirements of around 1,000 Engineers, 356 doctors, 3,000 agriculture and veterinery graduates apart from requirements of industrialisation under which there are plans to establish two paper mills, a cement factory, and a spinning mill etc.

The planners should take-up a general survey and study of the overall shortage and requirements of manpower in the state. This will also help in the long-period perspective planning of educational and training facilities to be developed within the state for optimum utilisation of the manpower resources and economic development of Manipur. □

NEC'S Anti Jhumming Measures

R N. Bez Baruah

WITH the world's largest area under Jhumming or shifting cultivation, the north-eastern region has certainly been subjected to the dual scourge of denudation of forests and impoverishment of surface soil.

About 41 tonnes of top soil per hectare, it is estimated, gets lost or washed off from a Jhum plot annually, set off by indiscrimination destruction of forests and high annual rainfall. Of the total geographical area of the region, hardly 13 31 per cent is under settled agricultural practices. About half a million tribal families of the region practice the Jhum system of cultivation.

A significant step for weaning away the tribals from the Jhumming practice was taken under the soil conservation and control of shifting cultivation programme launched under the auspices of the North Eastern Council, and 5,296 poor agriculturist families were settled in 1.13 lakh hectares of land . developed for the purpose during the Fifth Plan.

The programme which involved a total expenditure of Rs. 4.97 crore was implemented in eight pilot projects taken up in the seven constituent units, Mizoram having two such pilot projects.

Besides, the NEC has undertaken a few other schemes in order to introduce an element of dynamism in the stagnant rural scene in the region. The major emphasis has been to acquaint the agriculturists with new practices and also to make available to them improved varieties of field, tuber, root and spice crops and also to introduce improved varieties of major temperate tropical and sub-tropical fruits. Of the five progeny nurseries established under the fruit schemes in different areas, a few have started distributing plants.

During the Sixth Plan, the NEC will sponsor three new schemes for regional foundation seed farms for major crops and one seed farm for root crops. These will be located in Assam, Manipur, Tripura and Meghalaya. The setting up of two vegetable farms has also been accepted in principle. Four potato seed farms, a ginger seed farm scheme together with the dehydration unit have been carried over from the Fifth Plan. All the six regional progeny nurseries taken up during the Fifth Plan have been accepted as continuing schemes for the Sixth Plan, while one regional banana nursery farm has been included in the current plan.

Cure for virus infection

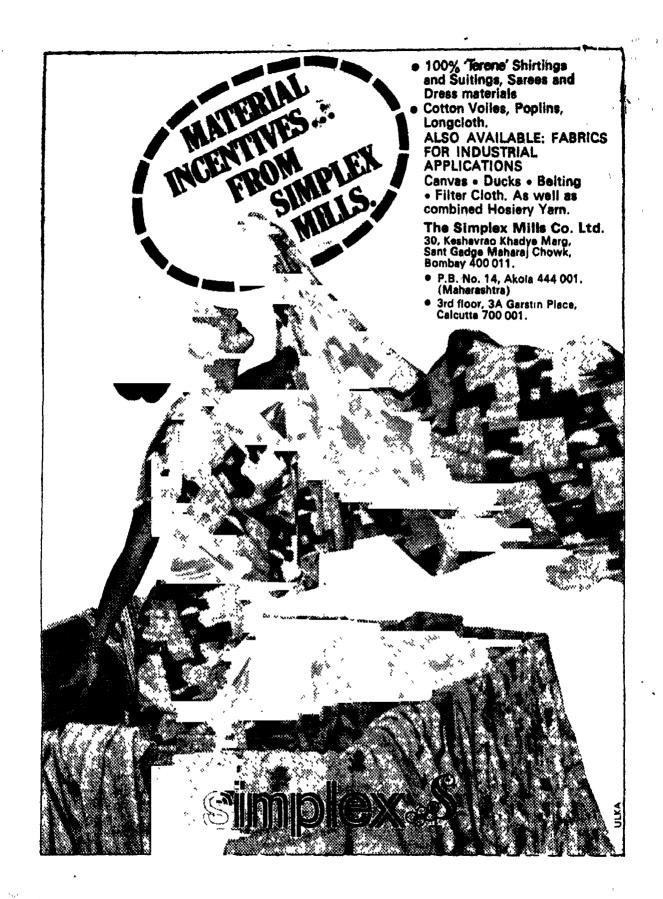
Indian Council of Agricultural Research has developed a cure for the citrus in old orchards in the North eastern region through a process of orchard maintenance and proper application of fertiliser. By this process, the Yield is raised to as many as 400 fruits per tree against only 38 earlier.

A recent survey conducted by the ICAR revealed that virus infection and prolonged negligence have led to citrus decline in old orchards in the N.E. region. The survey says that while 3 per cent of trees in the region are succeptile to virus infection, a major proportion of the decline is accounted for by complete neglect. This is particulraly so in respect of the southern slopes of Khasi Hills in Meghalaya State following the stoppage of traditional trade with erstwhile East Pakistan (now Bangladesh).

The ICAR cure has helped orchards of umpui Hills in Tripura, Jatinga in Assam and Satsagiri in Meghalaya considerably. Growth of trees with dark green foliage yielding on an average 1000 to 3000 fruits annually has been achieved in these orchards.

The region is one of the three major centres growing different species of citrus trees in the country which cover an area of 13,000 hectares with an annual production of 80,000 tonnes of fruits.

Among other citrus species, the Assam lemon is found at all places in the region almost round the year. The State authorities are currently exploring the possibility of using fruit to produce pection oil and citrate. ICAR is also studying the cause and remedy of phytoptheca (root-rot) in citrus plants.

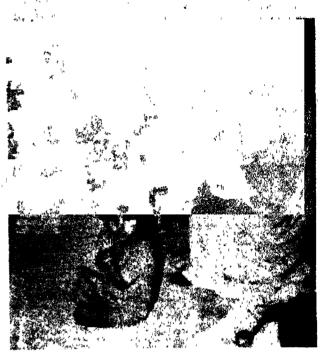
Simultaneously the North Eastern Council is implementing pilot demonstration schemes on citrus rejuvenation in major citrus growing belts in the region. □

Adult Education in Rajasthan

Shakuntala Mahawal*

SHRI Gautamlal Dangi of Dev, a village near Udaipur in Rajasthan, was till recently an ordinary farmer but educated upto the eighth standard He has been taking an active part in the National Adult Education Programme. He is the teacher for about forty adults who are attending his evening classes regularly.

Kholri, a nearby village is another centre of adult education. About 30men of 15-35 age group are learning to read and write. They are able to locate Rajasthan on the map of India. Most of them can solve confidently and correctly sums of addition and subtraction, multiplication and division. They have learnt from their books about the improved means of agriculture and irrigation, fertilisers and pumpsets. A women's centre of adult education is functioning in Negaria village of Bargaon Block in Udaipur district. Smt. Khuman Kunwar, the instructress is a middle-aged traditional Rajput lady. Besides basic literacy, the women pupils are taught health and hygiene art and crafts which are useful to them in their household duties. They, now, have realised the importance of pure drinking water. So they boil or strain the water before drinking.

Such education centres go a long way in creating among the adults basic awareness of the world around them, and building up self-confidence to take control of their lives to a greater degree besides increasing their ability to make better use of their available resources—their small farms and homes included.

According to a recent study carried out by the Indian Institute of Management, Ahmedabad, voluntary agencies have contributed a great deal in the success of this nation building activity. There are 95,000 adult education centres functioning in the country and nearly 33,000 are being run by the voluntary organisations.

...There are over 10 crore illiterates in our country out of which 50 lakh are in Rajasthan.

In Rajasthan, 66 voluntary organisations have been sanctioned a sum of Rs. 50.5 lakh by the Government of India to run 2,870 adult education centres. The Central Government and the State Governments have 3600 and 3400 centres in Rajasthan respectively.

Our country has over ten crore illiterate persons, out of which 56 lakh are in Rajasthan according to 1971 census. The NAEP aims at making them literate in a phased programme of five years. To bring this large number of people from darkness to light is a gigantic task. However, a beginning has been made. ☐

*Information Officer, Press Information Bureau, Jaipur

Development of Sunderbans —A Formidable Task

S. K. Ray*

THE development of the Sunderbans, which is part of 24-Parganas, a district of West Bengal, bristles with a great many problems that are inherent in this deltaic land, and the historical and socio-economic factors characteristic of this region underline the need for a special development strategy. Perhaps, in appreciation of this need the Government of West Bengal constituted the Sunderban Development Board in 1973—the first ever concrete step since Independence towards a concerted action programme for the integrated upliftment of the area. Though handicapped from its very inception for lack of adequate funds SDB has shown impressive results through a chain of growth centres organized at selected spots. These growth centres primarily aim at the pooling of productive talents and entrepreneurship at the grass-root level for the optimum development of the target areas. In these few years since the first batch of growth centres were formed in 1974-75 they have demonstrated how with little financial resources production can be raised manifold if the people unite work and exploit the latent local potentialities. And now, with financial assistance from the International Fund for Agricultural Development (IFAD) the Sunderbans is poised for a more comprehensive development Let us first have a look at the land and the people of this region and assess its development potential.

Land and People

A flat low-lying area formed mainly by the silt carried down by the Bhagirathi and its many branches as well as the silt brought in by tides originating in the Bay of Bengal, the Sunderbans sprawls over 9,629.9 sq. km. of which 4,493.6 sq. km. is covered by human habitation and 4,263.1 sq. km. by forests declared "reserve" since 1911.

Till 1833 almost the entire region was overgrown with thick jungles. The early settlers selected a few river basins east of Calcutta, erected earthen embankments around the ground to prevent the ingress of the tidal water and started cultivation in the protected zones after clearing the forests and jungles. The colonisers then gradually spread deep into the interior, reclaiming more and more land.

The ever-widening horizon of human habitation notwithstanding life in the Sunderbans is beset with heavy odds, the geographical and topographical features of the region being what they are.

Today about twenty lakh people (4.5 per cent of the State's population) live in the Sunderbans, according to the 1971 census. The region's gaping backwardness is reflected in the very low per capita income of a mere Rs. 444 as compared to the State's average of Rs 1,007, according to the 1973-74 estimates. Backward classes form 42 per cent of the population while their percentage is the State's population is 25.6. The economy is almost entirely based on agriculture. The ratio of agricultural workers to the total number of workers is 88.5 : 100 as against the ratio of 57.5 : 100 for the State. An overwhelming majority of the owner cultivators is of small and marginal farmers. Of every 100 holdings 40 are less than 0.5 hectares and another 44 between 0.5 and 2 hectares. The proportion of landless agricultural labourers is also very high. They constitute 50.2 per cent of the total agricultural workers. What is more distressing is that their number has been steadily increasing. Though unfortunately this is the trend in West Bengal, nay in the country, the pace of growing impoverishment among the cultivators in the Sunderbans is more alarming. It is estimated that between 1961 and 1971 landless workers increased by 15.7 per cent against the increase of 9.9 per cent at the State level. The techno-economic survey conducted in the area by the Sunderbans Development Board in 1973 and 1976 indicated that nearly fifty per cent of the households were indebted. The social backwardness of the people can also be gauged by the low level of literacy. While the literacy percentage in the State is 29.3, that in the Sunderbans is 20.7.

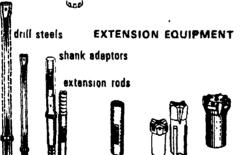
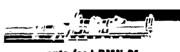
Constraints on Agricultural Growth

While people principally depend on agriculture for their livelihood poor yield make it a precarious living. Barely one per cent of the total cultivated land is irrigated. As much as 96 per cent of the land grows only one crop, the aman paddy in the kharif season, and remains fallow for six months in a year due to lack of irrigation facilities and the farmers' unfamiliarity with the technique of dry farming. The high-yielding varieties can not be introduced in the kharif season because of excessive water-logging which results from drainage congestion during the monsoon.

Impediments to agricultural operations are further compounded by the high percentage of salinity in the surface soil. The natural soil associations found in the Sunderbans originated from the parent materials of the Ganga alluvium and the salinized Ganga alluvium. The direct deposits of the Ganga alluvium are normally salt-free, but the indirect deposits are saline. The silt and clay loads carried down the river beyond the delta into the sea get mixed with the sodium chloride of the sea water and rush back with the tidal water and get deposited in the inland plains Crops can grow if the salt content of the soil is within reasonable limits.

The Remedy

The soil of the Sunderbans can be made to yield much better crops if the three problems of agriculture in the region viz. soil salinity, drainage congestion and lack of irrigation facilities are tackled through suitable soil and water management. And in any scheme of development of the region these matters must claim the highest priority. For agriculture should form the core of its economy, not merely because nearly ninety percent of the people live on agriculture. Problems of communication in this riverine landscape and lack of mineral and other resources in the area limit the scope of non-agricultural activity in the near future. The twin problems

*Our Sr. Correspondent, Calcutta

of drainage during the kharif season and irrigation during the winter and summer months can be overcome at once by a network of drains and sluice gates. The drains can serve the dual purpose of draining excess rain water from the farming fields in the kharif season and of storing rain water for use later to raise a second crop. The water flow in the drains can be regulated by sluice gates. Derelict channels and ponds can be re-excavated and new community ponds dug to store rain water. Of the average annual rainfall of 1,763 mm only about 900 mm is utilized for the kharif crop and the rest goes waste. A proper water management will not only permit the growing of high yielding paddy in the kharif season but will facilitate an intensive use of the land through multiple cropping as well. The salinity of the soil can be reduced by better water management and by the application of organic matter like saw dust, organic manure and paddy chaffs. The feasibility of growing high yielding varieties of paddy with good results has already been established. By conducting varietal screening of different strains of paddy on their experimental farm the Operational Research Centre at Gosaba of the Central Soil Salinity Research Institute has found that such high yielding varieties of aman paddy as the Pankaj, Masuri and CR 1014 and short duration paddy suitable for both the kharif and the rabi seasons like the Mutant I and Jaya can be very successfully cultivated in the region with proper water management. The Research Centre has also found the Ratna Janak strain of barley and sugar beet highly suitable for cultivation as a second crop in the rabi season.

Pisciculture is another field which has unlimited possibilities of gainful employment for many. Apart from brackish water fisheries sweet water fisheries can also be profitably organized in the Sunderbans. Ponds storing rain water can nurse imported fingerlings and produce good quality sweet water fish through proper treatment of the pond with mohua oilcake. The Gosaba Operational Research Centre successfully conducted over the last three years experiments on composite sweet water pisciculture of different varieties of fish and raised the output of fish per hectare of water area from a mere six or seven quintals as obtained in the normal course by the villagers to as much as fiftythree quintals. As for brackish water pisciculture there is a tremendous scope for development, with seeds of quality prawn and fish, particularly mullets, of high protein content abounding in the esturian waters. The traditional method of 'bheri' culture depends on the trapping of the fish seeds with tidal ingress. But because of the unchecked entry of all sorts or organisms with the tidal flow the rate of survival of the fish seeds is low. The Brackishwater Experimental Fish Farm at Kakdwip has evolved a technology which has greatly increased the survival rate.

SDB Does Spade Work

That there is immence development potential in the Sunderbans is beyond dispute. Yet it is a fact that massive efforts are called for to tap that potential. The necessary spade work has already been done by the Sunderbans Development Board through their 27 growth centres whose strategy of action consists in channelling the manpower resources to fruitful pursuits. People's participation forms the basis of the growth centre programme and the extent of their involvement in the operations of these centres is the measure of the success of the programme. Not only has there been a popular response to the activities of the centres in their respective areas but there has also been a 'spread effect' on the adjoining area of these centres conceived as they were as catalytic agents. A steady rise from year to year in the area covered by the second crop as also in the number of the small and marginal farmers participating in raising the additional crop and more and more diversification of economic activity in each successive year reflect the achievements of these centres.

The growth centres primarily aim at increasing the cropping intensity by encouraging as many persons as possible, particularly the small and marginal farmers, to grow crops in lands lying fallow during the dry season. Irrigation facilities are being extended by re-excavating derelict canals and ponds and advice on cropping patterns given to the farmers. Also being provided is fifty percent of the investment requirements as subsidy in the form of inputs like seeds and fertilizer to the farmers in the first year of the operation only. What is heartening is the fact that the farmers who initiated raising a second crop are depending entirely on their own resources to carry on dry farming in the following years. The growth centres of SDB can legitimately claim the credit for the introduction of such rabi crops as sunflower, groundnut, water-melon and chillies in different areas of the region.

It is not agriculture alone which is engaging the attention of the Sunderbans Development Board. To encourage allied activities like horticulture and animal husbandry and thus create new avenues of productive employment forms part of the action programme of the Board's growth centres. As a pilot venture the centres are organizing animal husbandry units on household basis to help the landless labourers in particular. Cows, pigs and birds are being distributed among them on a fifty per cent loan and fifty per cent grant basis. To make them genuinely involved in the growth centre programme a scheme for setting up backyard orchards in their homestead land is also being implemented.

SDB has now ventured into the field of small and cottage industries also, depending mainly on natural resources and local skill. Under a scheme launched in 1978-79 the Board has been rendering guidance in scheme formulation and financial assistance in the form of loans to local entrepreneurs. The work done by the Board in improving the communication facilities by building jetties, footbridges, culverts and brick-paved roads is also not insignificant.

A Project with a Promise

The growth centres of SDB have been playing the role expected of them within their financial limitations. Fortunately for the people of the region, the International Fund for Agricultural Develpoment has come forward with financial assistance of 15 crore rupees to implement a 30-crore rupee project drawn up by SDB. The project which represents the first phase of a long-term development programme covers 62.9 per cent of the total area and 61.1 per cent of the population of the region, selected on the criteria of high concentration of small and marginal farmers or backward communities and lack of irrigation and drainage facilities.

What is envisaged is the involvement of the people and people's organisations at all levels of

execution of the project which aims at developing the area mainly with the help of locally available technology and materials. The main thrust of the project is, and rightly so, towards making the farming activity of the small and marginal farmers a viable occupation. This will be done by increasing the productivity of land and making the land suitable for multiple cropping.

With the increased agricultural development of the region and emerging surpluses the need will be felt for setting up agro-processing units for the agricultural produce of a perishable nature. It is proposed to finance small units on a limited scale, to begin with, to provide the initial impetus to the growth of these industries by demonstrating, through actual working, the economics and employment potential of agro-processing activity.

The promotion of allied activities to supplement the incomes of farmers and landless agricultural labourers is an integral part of the project. The necessary infrastructure will be built up to service dairy, piggery and poultry units which are proposed to be set up with the help of institutional finance. A mobile veternary unit will shortly be commissioned. As the availability of natural animal feed is limited due to lack of land suitable for pastures the only alternative is processed feed which will be supplied by the State Dairy and Poultry Development Corporation.

Yet another important objective of the project is the development of esturian pisciculture. Two compact blocks are proposed to be developed for the culture of prawn and other brackish water species and the technology developed by the Kakdwip experimental farm which greatly improves upon the levels of production of the traditional 'bheri' will be employed.

Marketing, however, is the key factor for a sustained economic growth. With the rising yield from agriculture and allied activities there will be a marketable surplus of the produce which must find easy outlets to areas outside the region so that the producers have the required incentive to increase their output. Small farmers will be encouraged to market their produce through cooperatives in order to get a remunerative price. It is planned to develop market centres at three important points in the region with godowns which can also be used for storing agricultural inputs. And for easier flow of men and material the communication system in the area will be improved by construction of a network of roads, bridges and jetties.

This new project holds out a great promise for the people of the Sunderbans and will, if properly implemented, be the stepping stone to similar ventures of bigger dimensions that will ensure a brighter future for the inhabitants who have been neglected for long. The Sunderbans throw a challenge to the planners; though formidable, it can be succesfully met. □

President Tito

PRESIDENT Josip Broz Tito of Yugoslavia was the last of the founding fathers of the non-alinged movements, was the last political giant of the twentieth century. Tito along with Nehru and Nasser founded the non-aligned movement at the first conference held in Belgrade the charter of non-alingnment was drawn up which continues to inspire the nations and finds them together in the family of non-aligned world. President Tito was a great friend of India and India has lost a close friend.

In the death of Marshal Tito, the world has lost a statesman of vision and imagination, a true patriot and a valient fighter for freedom. He was not only a world leader of pre-eminence but also a co-initiator of the principle of non-alignment.

President N. Sanjiva Reddy

President Tito was held in high esteem and affection in India as the leader of the friendly Yugoslav people, an outstanding world statesman and a maker of history.

His sage counsel has guided the non-aligned movement through some of its tribulent years.

Prime Minister Smt. Indira Gandhi

State Road Transport Undertakings

K. M. Balasubramaniam

IN this country the freight traffic on road has been almost entirely in the private sector, while the passenger traffic has been gradually coming under the fold of Public Road Transport Corporations/Undertakings. With the launching of the Five Year Plan, the importance of developing road transport in a systematic way was given due recognition. According to one estimate, the total passenger traffic carried by road was 235 billion passenger kilometers in 1976-77, while it was estimated to be only 57 billion in 1960-61. With the emerging energy situation, personalised transport is giving way to public transport system.

In India, there are 48 nationalised road transport undertakings as on 31st March, 1978. Of this, 23 are State Road Transport Corporations and the rest are either Government Companies or run by the Municipalities. The total fleet strength on the passenger side of these undertakings is 58,128. This works out to about 55 per cent of the total fleet in the country. The total capital invested in these Undertakings as on March 31, 1978 was about 750 crores.

Senior Research Officer, Planning Commission.

Performance

It will not be out of place to mention that most of the transport undertakings throughout the world are not able to meet their financial needs fully, either for development purpose or for their maintenance. According to the study, even the United States of America is facing a major financial crisis with respect to its transportation system. In 1976, it was reported that the public transport industry could meet only 54 per cent of its cost from the passenger fare collection. According to another study, the percentage of passenger revenue over expenditure was 70 per cent in U.K., 48 per cent in France, 64 per cent in Switzerland and 60 per cent in Spain. All these undertakings received grants from public authorities to meet the gap between the passenger revenue and operational expenditure. The grants varied from 16 per cent to 54 per cent in some of the major European Public Transport Undertakings.

An assessment made on the financial working of State Road Transport Corporations in 1978-79 indicates that most of the Corporations in the country showed losses. Except Assam, Haryana, Jammu and Kashmir, Maharashtra, Orissa, Tamil Nadu and Uttar

Pradesh, all other States showed losses. The total loss by the Corporations amounted to Rs. 31.53 crore. From a study of the financial position of these Corporations, it was observed that the cost per passenger kilometre is higher than the revenue per passenger kilometer in respect almost all corporations. One of the reasons for this imbalance is the increase in prices of material and expenses on staff. It may be recalled that the price of diesel in 1964 was Rs. 660 per kilolitre, while in 1973 it rose to Rs. 826. In 1975, the price has gone up to Rs. 1087 indicating an increase of 32 per cent over that of 1973. With regard to tyres and tubes also, there has been a steep increase in prices Similarly the cost on personnel was about 15 paise per kilometre in 1964 which went up to 26 paise per kilometre in 1973, showing an increase of 73 per cent.

To break even, the Corporations should increase the operational efficiency reflected in higher fleet utilisation and load factor. The average fleet utilisation for the country as a whole work out to 75 per cent in 1975-76. Some of the Corporations in the eastern region indicated a very low figure in this respect. The load factor can be improved by appropriate route scheduling. It may be noted that if the road factor indicates a percentage of 25 or below, there is a need for reviewing the scheduling in those particular routes. If the load factor goes beyond 75 per cent it indicates overcrowding and need for induction of more buses on those rutes

The Five Year Plans have been giving importance to provide workshops to increase the fleet utilisation. Despite high operational efficiency, however, some of the Corporations are still having operational losses. This indicates that the fare structure in almost all the Corporations is below the break-even level. However, there is a limit beyond which the fare cannot be increased, as the Road Transport system serves as a public utility service also.

It is observed from the fare structure of the various Corporations that most of the Corporations include in their fare, passenger tax. The passenger tax varies from 25 per cent to 60 per cent of the fare. This is collected by the Road Transport Corporations and passed on to the State Exchequer. When most of the Corporations are undergoing losses, there seems to be little justification for collection of passenger taxes by the State Governments through these Corporations. If these taxes are passed on to the Corporations or some fare revision is allowed, the losses can be wiped out in most of the cases.

As the transport is a public utility service, performance cannot be measured in terms of profitability alone. The quality of service also counts though it is difficult to be quantified. The quality of service is reflected in higher satisfaction to passengers. It can be measured in timely departure and arrival of buses and the waiting time for the passengers. This needs a detailed survey, which most of the Corporations are unable to undertake at present. The breakdowns and accidents ratio and the missing trips may also indicate to some extent, the quality of service rendered by the undertakings.

From a study of the working of the Road Transport Corporations, it has been observed that disproportionate expenditure incurred on personnel reduces the economic viability of the undertakings. This can be analysed from the staff vehicle ratio data provided by the Corporations. There is scope for rationalising this ratio in respect of most of the Corporations. The losses are also likely to increase as and when the Corporations extend their operations to mere uneconomical routes in the rural areas, where load factor may be low and the break downs more, because of the substandard conditions of the roads in such areas. The private operators may not serve these areas as they are uneconomical.

Keeping in view the public utility factor of the Road Transport Corporations and also taking into account the need for operating these Corporations on a commercial basis, the only feasible way out seems to be that the development expenditure of the Corporations may have to be met by grant from the States. The operational needs should be met from the internal resources of the Corporations themselves.

Inspite of assistances, most of the Corporations are not able to meet even the replacement requirements from their own resources. One way out could be to convert a portion of the loan capital provided to these Corporations into equity capital so that these Corporations may have some viable capital base to obtain assistance from institutional financial agencies. As stated earlier, even in the most developed countries like the U.S.A. and some of the European countries the capital expenditure of the Transport Undertakings are met through grants from public institutions. It is hoped that the recommendations of the National Transport Policy Committee would throw more light on these aspects. □

Efficiency in Agriculture

Economic Efficiency in Indian Agriculture : Theory and Measurement : R. K. Sampath : (The Macmillan Company of India Limited Delhi, 1979); Pages : 173 Price : Rs. 40.

THIS book is an attempt to verify the Schultzean hypothesis that farmers in traditional agriculture are poor but efficient in the context of Indian agriculture. Using the 1967-68 Farm Management Survey Data relating to a backward district in Uttar Pradesh—the Deoria District, the author rejects the Schultzean hypothesis and asserts that the poor farmers are inefficient as well, and that 'there is ample scope for increasing their farm income by utilising their available resources and available technology much more efficiently'.

The author finds that poor farmers are technically inefficient as well as inefficient in allocation of inputs. But the contribution of technological efficiency to total inefficiency is more than the contribution of allocative inefficiency.

He finds that piecemeal measures like providing more credit or irrigation facilities will not help the farmer. Hence he argues for providing more 'gainful non-farm employment' to the farmers and to his family members during off-seasons.

The book also contains a useful list of references and an index, apart from a foreword by Peter Rogers. As Rogers rightly observed the author had an open mind, looked at the problem without any ideological spectacles, and analysed the implications objectively wherever they may lead.

Jandhyala B.G. Tilak

Medical Moral

Medical Sociology in An Indian Setting, by R. Venkataratnam, Macmillan Company, Madras, pp. 273 ; Price Rs. 20.

R. Venkataratnam has done a pioneering study. The profession of medical practioners in India was never subjected to such a rigorous empirical in-depth study.

The study is divided into six main chapters dealing with the research methodology, structure of medical services in the State of Tamil Nadu and the history of the hospitals, social background of doctors and nurses, organisational structure and role prescriptions, role expectation and role performance, besides main conclusions of the study. Following the tradition of rigorous reseach methodology, Venkataratnam has tried to quantify almost every observation of his, but direct observations have also been extremely enlightening. He has stated that 74 per cent of women doctors and 26 per cent of men remain single whilst this percentage among the nurses is of the order of 61 per cent. Among the various reasons for celibacy adduced by the author, it is surprising to note that reluctance of bridegrooms and their parents to have highly qualified women as their brides to be the main reason ! The author has stated : "Generally in Tamil Nadu bridegrooms and their parents do not prefer highly qualified women, for they feel it would be difficult to 'manage' them or they will not be obedient housewives. They think that economic independence will make women arrogant and disobodient to [illegible] as well as to their husbands." (p. 33). The nurses had more difficult time as far as their marriage possibilities were concerned. They did not feel that their education was a handicap to marriage but their profession was a positive handicap. "Though nursing is considered to be one of the noble professions, its public esteem is very low according to them", the author has noted.

The most important chapter of the study relates to role performance where the author has noted the shortcomings of this noble profession where the patients go not out of joy but driven by the necessities of life-and-death struggle or when afflicted by serious maladies. The doctors' approach instead of being sympathetic is in many cases quite the contrary. The doctors who are permitted private practice are found accepting consultation fees from their patients before arranging for their admission to the hospitals. The author has noted instances when surgical operations have even been delayed due to malpractices among the doctors. "Most of the doctors felt that they were deprived of income commensurate with their qualification and experience" (p. 185). Money has procured beds even when none was available. (P. 186) Political favours go both ways The doctors expect favours from the politicians in their personal and service matters whilst the politicians are accorded special treatment. (pp 187-8) The author has noted the role performance of the doctors, and nurses in quite detail eschewing any subjective remarks which has made the work extremely interesting and enlightening. The book is well written and nicely produced

Bepin Behari

Gulf Trade

Exporting to World's Richest Gulf Countries by G. D. Sharma, U.B.S. Publishers & Distributors Ltd. 5, Ansari Road, New Delhi, pp. 160 Price Rs. 30.

THE usefulness of the book dealing with export opportunities to the eight oil rich West Asian countries is obvious. The countries covered are Iran, Saudi Arabia, Iraq, Kuwait, Abu Dhabi, Dubai, Bahrain, Oman and Qatar. In addition to traditional items of exports, a number of new lines have been indicated which can be taken up profitably by enterprising entrepreneurs. These countries "do not have any agricultural base and import almost everything they eat and consume." India, he points out has several natural advantages over other countries in exporting to the gulf nations. Yet, "India has not been able to seize an opportunity offered by the sudden influx of affluence in the gulf region The industrially advanced countries, on the other hand, have been quick to avail of it and adapted themselves to the new conditions", observes Mr. Sharma.

Dealing individually with each country, the author gives the names and addresses of commission agents and firms with various items of import.

Baldeo Sahai

Human Settlement

Human Settlement in Asia—Public Policies and Programmes by Dr. R. P. Misra and B. S. Bhooshan, Hermitage Publishers—Rs. 75.

SINCE the dawn of civilization, there has been constant endeavour of man to improve the quality of his life through continuous experiments and organisation for improvement of human settlement The choice between urbanisation and village settlement has been an age-old controversy. Most of the ancient cultivations viz. Egyptian, Mesopotamian or Indus Valley (Harappean) were urban. Such civilizations were destroyed either by natural calamities or vandalism of human beings. The problems of human settlements, even today, are more or less the same. Large scale environmental pollution and migration, have focused the attention of various international and national authorities on the current problems of human settlement which may assume gigantic dimensions and destroy the very fabric of human society. The United Nations, therefore, organised a conference on Human Settlement at Vancouver, Canada in May—June 1976 which was attended by as many as 145 countries to evolve some guidelines for formulating public policies and programmes in this respect for the member countries. The book is essentially a critical approval of the impact of the UN Vancouver Conference in six selected Asian countries—namely, India, Nepal, Indonesia, Phillippines and Japan and has a separate chapter on China, the country which did not attend that conference.

The book presents an integrated picture of the policies and programmes followed by these seven countries and also identifies the development trends in these countries.

The study reveals the characteristics of different groups of countries based on politics and socio-economic policies. It draws similarities and diversities between the countries based on their characteristics—India and Nepal for example, have essentially a rural society. Both have evolved some democratic and participatory institutions and have a huge mass of illiterate, poverty sticken people for whom democracy has little, if any, meaning. Both the countries have been caught in the dichotomy of tradition and modernity. Against this, the Chinese model of development lays greater emphasis on mobilization of the people for their own development.

In the third category of developing countries viz. Phillippines and Indonesia, a highly centralised administrative system exists without clear ideological bases for political decision-making These countries have same topographic similarity as they are both archipalagoes

Singapore and Japan are among a few developed countries in Asia. Singapore is bent upon rapid industrialisation and modernisation. Evolution of Japan as an industrial State is a well-known phenomenon. It is a rich country with rich tradition, but poor natural resources. There, the main determinates of the policies and strategies of development are businessmen and not bureaucracy or politician turned into economist.

Muddle, confusion, dilemma and symbolism are writ large on the human settlement policy situation in most Asian countries specially in the under developed ones. Priority in most cases is confined to keep things going through short-term measures. However there are some signs of at least the recognition of the need to formulate long term human settlement policy.

Japan and Singapore which are highly urbanised have reached a level of development where most of the people are assured of minimum living condition. The dilemma of urban vs. rural is not so deep in other countries as it is in India.

The book contains valuable facts and information in addition to a bibliography which are useful to those who are working in the field of economic, social or regional planning.

Biman Sen

Planning in Nepal

The Development Experience of Nepal by B. S. Bhooshan—Concept Publishing Company, H-13, Bali Nagar, New Delhi 110015. pp. 195 Price Rs. 60.

THE book deals with the salient aspects of economic development of Nepal with a major focus on the problem of human settlement. It is observed that an important dimension to the development problem in Nepal is the highly marked disparity in the different regions. Barring the Kathmandu Valley which is a small pocket, the *terai* region leads the rest of Nepal in economic development. It is also true that hitherto no other region has received a larger attention than what the Kathmandu Valley got.

The book does not make a detailed analysis of the achievements and the shortfalls in the implementation of the various Five Year Plans in Nepal. According to the author, the aim of Nepalese planners has been to make great achievements with the least change in the social and political system. Even with some progress achieved in building the infrastructure within the country, the question of equity was never raised boldly any time and the backward groups never got any major special assistance. The author concedes that the situation has now been corrected to some extent by adopting the principle of regional planning and decentralisation in decision-making.

Navin Chandra Joshi

Monetary Policy

Monetary Policy in a Developing Economy by Vivek Vardhini Education Society's research Institute, Hyderabad. pp. 43 Price Rs. 5.

THE book is an attempt at studying the Monetary Policy being pursued in India over the decade 1960 to 1970. The element of critical analysis which one expects in a study of this nature is conspicuous by its absence. To that extent the study falls short of the objectives stated therein. Even the narration has very important gaps. To a discerning eye certain parts of the book do not appear to be well integrated into the main stream of the analysis. The book is somewhat disappointing.

Amitava Mukherjee

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TRENDS

Go To Villages

THE personnel policy being pursued by the Government should be geared as to encourage more people to go to villages, according to the Deputy Chairman of the Planning Commission, Dr M. S Swaminathan.

Delivering the valedictory address at the conclusion of the workshop on rural development in New Delhi, urged the 50-odd members of the rural development and social welfare panel of the Punjab, Haryana and Delhi Chamber of Commerce to be selective in their mode of operation. Immediate stress should be laid on the landless labour, he said

Interested industries should take up the task of augmenting the purchasing power of villagers and help increase 'wage-employment as well as self-employment'

Dr. Swaminathan reminded the industrialists that priority lay in adequate attention to evolving appropriate technology services and policies for rural development. Post-harvest technology, water management and pest control were some of the other areas which demanded immediate care, he added.

MP Project Approved

THE Planning Commission has approved the Hasdeo (Bango) multi-purpose project in Madhya Pradesh at an estimated cost of Rs 115.30 crore. The project will irrigate a total area of 3,27,842 hectares, out of which 1,63,712 hectares will be under Kharif, 1,27,379 hectares under Rabi, 22,969 hectares under summer and 13.782 hectares under perennial (Sugarcane) crop. The entire command area is in Bilaspur district of Madhya Pradesh.

The Project envisages the construction of a solid gravity masonry dama 85 04 mts. high above the foundation and 660 mts. long across the Hasdeo River, an earthen dam (dyke) 27 mts. high and 1959 mts. long on the right flank, installation of penstocks in the masonry dam, excavation for power house for seasonal generation of hydro power in future and extension of canals on both right and left banks, beyond the sections are already constructed

Report on Evaluation Work

THE Programme Evaluation Organisation (PEO) of the Planning Commission should direct more efforts to evaluate the Projects of an experimental nature so that the Government could quickly come to definite conclusions on their merits says the report of the committee set up by the Planning Commission under the chairmanship of Mr. P. R. Dubhashi, Additional Secretary, Union Agriculture Ministry.

Follow-up action on the recommendation of the evaluation reports should be taken up by the department overseeing the administraion of the programme and the concerned division of the Planning Commission.

The report further says that more data should be obtained than is being done at present in the evaluation reports on additional incomes and employment generated as a result of the execution of development programmes. The PEO should endeavour to take up the evaluation of critical programmes, schemes and projects of all sectors of the economy, whether urban or rural and all areas of Government functioning including compact projects involving large amounts of concentrated investment.

Nutrition Project In TN

THE International Development Association (IDA) is to give a credit of 32 million dollars for an integrated nutrition improvement project being launched in Tamilnadu. Negotiations for the credit were concluded in Washington recently. The project which will cost about Rs 54 crore will be undertaken in a phased manner over a period of 5 years.

Under the project, nutrition services and food supplementation will be undertaken for children between 6 months and 3 years of age and nursing and pregnant mothers in 170 rural blocks in the districts of Chengalpattu, Madurai, Norh Arcot, Pudukottai, Ramanathapuram and Tirunelveli. Nutrition surveillance will cover about 7,80,000 children and food supplementation will be provided to another seven lakh children. Pre and post-natal food supplements will be provided to about 2,75,000 women

Journals Told To Be Objective

THE role of the house journals of public sector units is not only to concentrate on the brighter side of the undertakings but to attempt critically examine the shortcomings also.

Then alone will their credibility and utility improve was the opinion of Information and Broadcasting Minister Shri Vasant Sathe He was inaugurating a two-day workshop on "production of house journals" organised by the Centre for Public Sector Studies

Absence of an objective assessment in house journals led the Press to project the darker side of the undertakings thus forcing public relations set up of these units to take a defensive stance.

Shri Sathe said the house journals should be a vehicle of communication among all sectors of the employees The publicity expert should consider providing an open forum in the journals to let the employees voice their grievances and express views which were not necessarily in agreement with these of the management.

Further they need not be obsessed only with the statistics of production and distribution. The human side of the achievement should not be ignored.

Languages other than English should also get increasing space in house journals, so that a larger number of employees could benefit and even participate.

Important announcements, particularly those relating to welfare activities, Shri Sathe felt, might be first made in the house journals so that their publication was keenly awaited by the employees and others.

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Editorial

Gradual Elimination Of Subsidies

IT is heartening to note the broad guidelines given to the newly reconstituted Planning Commission include working out a strategy for the gradual elimination of subsidies and replacing them with target-oriented services. This problem has assumed considerable importance as the cost of subsidies erode into the capacity of the fiscal system to raise resources and enlarge investment. It is not for the first time this question is being tackled. Even last year, the Planning Commission had supported a specific proposal of the Finance Ministry for a cut in the budgetary subsidies to the extent of 25 per cent. But unfortunately this proposal aimed at reducing government expenditure, narrowing the budgetary deficit and arresting inflation fell through. The Vadilal Dagli Committee which studied this problem found disparities in subsidies.

Subsidies on public procurement and distribution of foodgrains have been considered as an incentive to producers and a relief to the consumers. They have become a permanent feature of the Government policy. The subsidy on foodgrains accounts for nearly 40 per cent of the total direct budgetary subsidy. It is common knowledge that the subsidies have benefited only the middle class urban and industrial consumers. The vast masses of rural and urban poor have not been benefited by these subsidies. There are substantial subsidies on fertilizers and irrigation also. The proliferation and growing scale of subsidies do not necessarily correspond with the rate of growth of sectors or areas of economic activity to which they are given. A recent study called for a deep analysis of the subsidies to find out the extent to which they were justified in terms of costs and benefits.

Our economy cannot afford any part of the consumption of basic goods and services produced at exorbitant cost to be subsidised. Subsidy should be there for social consumption, specifically earmarked for those living below poverty line. It is advisable that our people are told the realities and made aware of the true costs of articles of daily consumption. □

The Problem of Subsidies

Balraj Mehta*

WITH mounting budgetary deficit and shrinking resources for investment and development, the question of subsidies of various kinds which flow from the public exchequer to selected sections and interests has assumed considerable importance. But whenever pricing or even rationalisation of budgetary and other forms of subsidies is considered, it becomes merely a talking point. Subsidies tend to be treated as commitments from which the government must not resile.

Last year, when the budgetary deficit was moving towards a record level, for instance, a specific proposal was mooted in the Finance Ministry and was strongly supported by the Planning Commission for a cut in the budgetary subsidies to the extent of 25 per cent. This was done as part of an overall design to reduce government expenditure, narrow the budgetary deficit to some extent and arrest rampaging inflation. Even so the proposal was turned down. Once this happened, the resource constraint took its inevitable toll in a cut of the development expenditure in the public sector.

The problem of subsidies is, of course, not limited to subsidies which are directly and openly paid out of the public exchequer. There are also a large variety of other subsidies—indirect and hidden. Both types of subsidies have been proliferating, more especially since the beginning of the seventies. To start with, all these subsidies were conceived of as temporary in order to take care of some special need, economic and social. But once granted, strong vested interests developed in their continuation. They have not only been retained but also enlarged in scale and scope with the passing of time.

This is how, for instance, subsidisation of public procurement and distribution of foodgrains began—as an incentive to producers and a relief to the consumers. But a stage has been reached when subsidy on this account has become a permanent feature of public policy and management of the food economy, regardless of levels of production, productivity and prices of foodgrains, both in absolute and relative terms. The same is the case with export subsidy which is another major and growing burden on the public exchequer.

The other forms of subsidies are by way of pricing policies of goods and services unrelated to the cost of their production and supply to the consumers. The incidence in this area is borne by the public exchequer, both directly and indirectly, when the goods and services in question fall within the ambit of public sector enterprise. The most notable examples of subsidisation in this form are in the case of fertilisers (direct) and coal (indirect). In the case of the fertilisers, the producers in public as well as private sectors are subsidised from the budgetary resources directly in order to enable them sell their products at less than their cost of production. In the case of coal, the prices are so fixed that the nationalised industry is unable to recover costs and, therefore, runs up huge losses which have ultimately to be covered by the exchequer.

Astronomical

Subsidisation by the mechanism of administered prices takes place on an extensive scale—from milk, to steel, from city transport to coal and in a variety of intermediate goods produced in the public sector. It also pervades the arena of transport, power and irrigation, a part of the subsidy involved being borne by the budgets of the State Governments in the first stage, ultimately to be borne by the Union Government when it is called upon to cover the deficits in the State budgets by way of overdrafts, advance Plan assistance and so on. The bill on account of such subsidisation adds up to a huge total in the form of losses of public sector commercial enterprises at all levels—central, State and muncipal. If, to this, is added subsidisation by way of cheap and easy credit by the commercial banking system, the total will be formidable indeed.

It will be a good idea for competent agencies to work out these totals. Their scale is only indicated by available data on direct budgetary subsidies. According to a Reserve Bank study, budgetary subsidies provided by the Union Government alone increased by 1500 per cent from Rs. 94 crore in 1979-71 to over Rs. 1500 crore in 1978-79. Subsidies, which formed only 1.7 per cent of the total expenditure of the Central Government in 1970-71, accounted for 8.2 per cent of its expenditure in 1978-79. In 1979-80, when the total expenditure of the Central Government signficantly fell because of certain financial transfers to the State Governments and the inability to step up development outlays in the central sector, the share of subsidies went up to 8.4 per cent of the total expenditure. The point here is that resources constraint, which impinges on overall expenditure of the government has not allowed to adversely touch the claims to subsidies on the part of selected beneficiaries.

Prominent among these subsidies is one on the procurement of foodgrains and their distribution which accounts for nearly 40 per cent of the total direct budgetary subsidy. The share of export subsidies is about 25 per cent of the total. Another 30 per cent go in other forms of agricultural subsidies, among them is subsidy on the sale and consumption of fertilisers. A significant fact to be noted in this connection is that proliferation and growing scale of subsidies do not necessarily correspond with the rate of growth of sectors or areas of economic activity to which they

*Assistant Editor, The Indian Express

are pumped. Export subsidies as a percentage of total exports, for instance, increased from only 2.7 per cent in 1970-71 to as much as 7.3 per cent in 1978-79. Similar is the case with subsidies going into the agricultural sector.

A recent study of the Reserve Bank raised the issue whether subsidies, budgetary subsidies in particular with which this study was specifically concerned, had promoted growth of the economy and achieved better redistribution of incomes in society which are the ostensible purpose and justification of any subsidy. The study refrained from giving a straight answer to the question it had posed and only called for a deeper analysis of the subsidies to find out the extent to which they were justified in terms of costs and benefits and how far they moved the economy to a desirable pattern of economic activity and income distribution.

While a deeper analysis by experts as suggested by the Reserve Bank study will be welcome and the Planning Commission has indicated a move in that direction as part of the exercises it proposes to undertake preceding the preparation of a new sixth five year plan, it may be useful to look at the problem from a simple, layman's position.

Not for the Poor

Take subsidies on foodgrains, for instance. They are supposed to help the "poor" farmer on the one hand and the "poor" consumer on the other. But what actually happens ? There are hardly ten per cent of the farmers who produce for the market on any scale and who are in a position to take advantage of every rise in procurement prices—and hence subsidisation—which have been increased year after year without any regard for the levels of production and productivity actually achieved. The subsidy on foodgrains procured on this basis and later distributed, by and large, to middle class urban and industrial consumers who are in a position to take advantage of the public distribution system, does not touch to any significant extent the vast masses of rural as well as the urban poor in our conditions, therefore, benefits essentially the upper levels of society in our economic structure rather than the really poor and the needy.

The fact must not to be missed, after all, that the majority of our pepole eke out their existence at and below subsistance level. They are hardly in a position to command the consumption of goods and services which enter the market and have price tags on them, so much so that there is not adequate demand for even subsidised foodgrains through the public distribution system even when masses of people suffer from hunger and malnutrition. For the rest, there are extreme income disparities which determine the structure of effective demand in the market and consumption pattern in society.

Who then benefits from the proliferating subsides of various kinds in these conditions ? Obviously those who purchase subsidised goods and services and the order of purchases that different income groups make except for what may be available for social consumption such as roads, educational facilities, health services, public water supply systems and so on. In the case of social consumption too, the share of individual social groups and classes is proportionate to their income levels.

The present system of subsidies, in addition, results in massive diversion of resources from economic development and social consumption. When investments are made either in the public or the private sector—and their end-products in the market do not recover their full cost of production, it implies, in the first instance, that those who consume them are being subsidised by those who do not consume them, in the main, by those who do not have enough purchasing power to take advantage of even their subsidised sale. In the second place, there is no generation of surpluses from investment and capital formation and for enlarging the areas of social consumption. This is indeed at the heart of the problem of resource stringency and the glib alibi for "realistic" rate of growth and size of the development plans which are advanced on that account.

Need for New Policy

There is often a formal debate over the adoption of what are called difficult and "harsh" options in the processes of social and economic development. The question is how these options apply and whom do they serve. There is a clear option open in the critical area of pricing and subsidy policy. The Indian economy, if resources are to be found for development, cannot afford any part of the consumption of basic goods and services produced at high cost to be subsidised. This applies to foodgrains as much to cement, fertilisers, power and irrigation system. Where and if there has to be subsidy, it must be for social consumption and in the case of personal consumption, specifically earmarked for those living below the poverty line.

This is the fundamental principle that must govern any system of public subsidisation but which is always ignored. The system as at present run and its further expansion which is being planned is essentially designed to subsidise consumption, on a selective basis, in areas of high consumption, and purchasing power. The essentiality of items involved too is loosely defined and they tend to be selected with an eye on middle class and upper middle class demand largely in urban areas. The foreclosing of supplies, which are in overall shortage, for subsidised consumption in this fashion only aggravates their availability and prices for others, among them the vulnerable sections, in the open market.

Public distribution system price regulation and subsidies to serve the right social and economic purpose must, therefore, be limited to a very small number of really essential items. Priority must be given, in addition, to enlarging the coverage of these few items to vulnerable sections in all the towns and villages rather than to increasing the number of items under it for the benefit of only selectively chosen groups and areas. So far as items of elitist consumption are concerned, they must be left totally free from all price and distribution controls and neither the consumers nor the producers of these items must be allowed to lay claim to subsidy of any kind.

A fundamental reorientation of policy, which will give precedence to the requirements of social consumption and economic development over the current consumption demands of what are called "viable" groups and classes has far-reaching implications. It is doubtful whether a total and decisive break with the established pattern will be possible for the Government.

It will hurt far too much sections, groups and classes which constitute what may be called the visible and reliable social base of not only the present Government but of the established power system and structure and will be considered politically not feasible. But, at least, the more marked distortions and anachronisms in this area will have to be removed with the aim primarily of minimising losses on the past investments, recovering a substantial part of the cost of production of inter-mediate goods such as coal, steel, cement and fertilisers and oil and pruning subsidies which are patently monopolised by upper income groups in urban and rural areas. The Finance Ministry harassed by subsidies and lean domestic resources in its hands and the Planning Commission if it has to promote development, must press for some adjustments on these lines and must not succumb to populist pressures. This is necessary if desirable schemes of financing development are not to be wrecked by the trend towards squandering resources in current consumption of upper classes at the cost of development of the economy and welfare of the mass of the people.

Efficiency in Irrigation Water Use

Dr. M. S. Swaminathan*

ON the basis of broad assessment made, the total quantity of utilisable water available in our country is of the order of 113.5 million hectare metres taking into account both surface and ground water resources. Hence, we cannot expect to provide even one metre of water to each hectare of our cropped area. It is, therefore, imperative that we should not only develop our irrigation potential, but also ensure that the water is utilised in the most efficient and economical manner to the best advantage of the farmers.

Irrigated agriculture is the biggest consumer of water in India. The gross irrigated area in the country in 1950-51 was only 22.6 million hectares. As a result of efforts put in since the commencement of the Plan era, the Irrigation potential created till 1979-80 is of the order of 56.7 million hectares.

Many of the irrigation systems in the country date back to the 19th century or earlier and need to be modernised in order to bring them up-to-date and to increase their effectiveness.

The total investment on irrigation development during the Plan era till the end of Fifth Plan in 1978 is Rs. 9282 crore, which includes Rs. 1812 crore of institutional finance on minor irrigation schemes.

With great spurt in the construction of irrigation schemes during the last three decades attention was drawn to faster utilisation of the created irrigation potential which showed a continued trend of increase in lag between the two, particularly in the major and medium irrigation sector. The anticipated lag in utilisation by the end of 1979-80 is over 3.5 million hectares.

Towards Optimisation

For optimisation of benefits from available waters, we have to see that the quantity of water available in the river at the point of storage or diversion into a canal system would yield maximum benefits to the society. I may mention about some of the important steps needed in this direction.

(i) Minimising losses at the storage/diversion point—A Part of the water stored in the reservior is lost by surface evaporation. The rate of loss of water varies from place to place and month to month depending upon climatic factors like temperature and humidity. The evaporation losses will be reduced to the extent possible by judicious operation of storage reservoirs. Utilisation of storage supplies to the maximum extent before the onset of hot weather season will be one of the aims for efficient use of storage water.

(ii) Minimising losses in the distribution system—A large part of irrigation water released at the canal head is lost by the time it reaches the field. Losses in channels arise from percolation, evaporation and transpiration from weeds in the canals and on the banks. The main loss is through percolation. Considerable research work has been done in the country on the efficacy and economics of various lining materials and actual performance of lined channels has to be viewed in the context of overall shortage of water resources. It is estimated that lining can save enough water to irrigate a substantial additional area. It is at the same time recognised that all channels cannot be lined for reasons of cost and practicability. Selective lining should be done judiciously looking into the the circumstances in each case. The losses in the distribution system are also minimised by rostering of the irrigation supplies. Proper location of outlets and providing them with gates and maintenance of channels in a satisfactory condition are all the various steps envisaged in reducing transit losses.

(iii) Efficient Water Use on Field.—The efficient utilisation of irrigation water on the field involves a study of many factors including soil, their physical and chemical properties, climatic conditions, water requirements of various crops, irrigation practices and drainage needs. Selection of proper crops and cropping patterns

*From the Key-note address of the Acting Deputy Chairman Planning Commission, at the workshop on Warabandi system in the Administrative Staff College, Hyderabad.

based on soil and agro-climatic conditions is indeed the first step for efficient use of water on the field. Proper land levelling and shaping with adequate drainage facilities, construction of field channels for eliminating field to field losses and selection of suitable method of irrigation to help efficient use of water on the field are essential. The various aspects relating to irrigated agriculture are being studied at different institutes, universities and research stations. Recent developments in agriculture and irrigation research have made it possible to scientifically assess the precise requirement of water at different stages of crop growth. Proper scheduling of irrigation can be made to ensure better yields and high efficiency in irrigation water use. In areas where water resources are in excess of land resources the strategy should normally be that irrigation will be provided at optimum levels in order to obtain maximum production per unit of water. In such a region the approach would be to serve maximum area, reduced intensity of irrigation in order to increase overall regional production and scheduling should be so tailored as to ensure water supply at such stages of crop growth which are more critical in respect of demand for water, so that crop growth and quality do not suffer. Information on multiple cropping systems for different regions is available. High yielding short duration crops have made it all the more possible to adopt multiple cropping systems. Localised field studies are conducted to obtain information on drainage needs of the area. Shallow water tables have also been exploited with advantage for crop production with minimum surface irrigation water supply. The research institutions in the country have been working on the choice of low cost material and techniques for the construction of efficient on farm water distribution system.

Warabandi System

The integrated command area development programme initiated a few years back aims at achieving better efficiency in the irrigation systems to ensure overall economic development of the farmers. The programme includes various items, of which on-farm works consisting of land levelling, construction of field channels, field drains etc. are considered to be the core components of the programme. These are essential to ensure supply of irrigation water to the fields well in time and in a properly regulated manner. It is only when these works are done that the rotational system of 'Warabandi' or 'Osrabandi' as it is called in some States, can be effectively introduced to attain the objective of equitable distribution of water to all farmers including the tail-enders and ensure supply of water to them in quantities according to the need of the crop to enable them to obtain optimum yields.

For successful operation of rotational system, the capacity of irrigation network should be such as would accommodate flow required for peak water demand. When the capacity of the network is not adequate to meet this demand, either rotation is not adequate to meet this demand, either rotation period should be adjusted or cropping pattern and crop calender altered.

Preparation of warabandi is a specialised job and needs trained staff. Under the Command Area Development, it has since been agreed to provide Central assistance on a matching basis for this item. The preparation and enforcement of Warabandi would also need legal backing. It hardly needs to be stressed that, coupled with the construction of field channels, this is an area where any amount of efforts put in would be amply rewarding.

Key features of the Rotational Water Supply system are : 1. A rigid schedule ; 2. An adequate and effective distribution system; and 3. Farmers' participation. The schedule will have to be so designed that it caters to the water requirements of the area and crops adopted and prescribes the volumes to be supplied. The simple way this is done is to supply a constant discharge for a specific number of hours is determined according to the size of the area and crop to be irrigated. If the demands are known in advance of the season, the schedule can normally be made constant throughout the season. Once the schedules are prepared, they need to be implemented rigidly.

Management Approach

A management approach for implementation of the Rotational Water Supply would be on the lines of planning the area alone with a set of objectives, organising men and materials with delegated responsiblities to identified presons with sufficient authority, leading them to take action and controlling and evaluating for future programme of action.

With the great change in agricultural technology along with advent of high yielding varieties of crops, the demand for more water has increased considerably and the system of warabandi comes as a very handy and efficient method to provide timely supply of the required quantities of water to the farmers' fields.

Considering these advantages the need for introducing warabandi system of water distribution has been repeatedly advocated in all irrigation projects in the country. The prerequisites like construction of field channels with appurtenant works like division boxes etc. to convey water to each farmer's field having been provided, there should be no delay in the introduction of this system which will require careful detailing out and supervised inmplementation in the initial stages. As soon as the farmers get to know the system and its benefits, they will themselves become alert and participate in its smooth working.

Recently the Planning Commission has decided that we should work for an average annual growth rate of 5 per cent of the Net National Product. This may be possible only if we can achieve a growth rate of at least 4 per cent in the agriculuture sector. Considering the low efficiency of current water use patterns in farming it should be possible to achieve a growth rate of 4 per cent per annum, provided we enable farmers to get the best out of the water available and organize marketing on efficient and producer oriented lines.

Indian Banking in Eighties

Navin Chandra Joshi*

SINCE the nationalisation of the major banks, banking services in India have indeed acquired the nature of public utility services. Banks are no longer functioning only as commercial enterprise motivated to make maximum profits. They have now become vital instruments for accelerating social and economic development of the country. They are usefully meeting the critical infrastructural needs of various regions and sections of the country's economy.

The performance of India's banks since their nationalisation in July, 1969 has been impressive in so far as the new social objectives set before them are concerned. Today, deposits as a percentage of national income at current prices form nearly 23 per cent as against about 14 per cent in 1967. Over 17,000 new branches have been opened since then and of these nearly 70 per cent are in rural and semi-urban areas. The average population covered per branch has improved significantly to less than 22,000. There has been a considable diversification in the bank's operations. The free flow of bank credit to big borrowers represented by large and medium industries as also wholesale trade was adequately curbed by imparting a degree of credit discipline. Flow of bank credit to this sector was restricted so as to keep it at the minimum. The share of these sectors in the total bank credit has gone down noticeably from about 80 per cent in 1968 to 60 per cent as at present.

At the same time, it is encouraging to note that the nationalised banks, while recognising the development of priority sector as urgent, have not relegated to the background the development of the traditional sector in industry. The two sectors have been considered to be complementary to each other in the economy for drawing resources of banks. The traditional industrial sector needs to be helped for achieving fuller utilisation of installed capacity along with their modernisation programme.

During the seventies, the share of priority sectors such as agriculture, small-scale industry, transport operators, retail trade, small business finance, education, professionals and self-employed persons, has gone up from 13 per cent to 30 per cent of non-food credit. Export credit during this time has increased from 6 per cent to 11 per cent. The number of agricultural borrowal accounts increased from a few thousand in 1969 to around 6 million in 1979.

Banks were guided by profit consideration till the late sixties but now they are called upon to make certain sacrifices for subserving the social needs of the country. In the wake of accent on weaker sections, the cost of supervision in the preferred and priority sector advances have gone up. The nationalised banks have also been doing different kinds of government work, the cost of which is in terms of diversion of attention and loss of work hours for the main banking business. Reducing economic disparties in the society is one such task assigned to banks. Most of the Bank's lending to the priority sector has been on account of social obligations rather than new profitable avenues from these sectors.

It is, however, strange that though from the angle of achieving national policy objectives the banks' performance has been creditable, the diversified activities have not yet emerged as viable economic propositions. If the banks have to improve their performance in the eighties, they have to emerge as viable and not as subsidised means of achieving national policy objectives It has to be appreciated that banking is not only a public service but it is a commercial enterprise as well. If the rewards for employing capital are not there or are inadequate, the entire structure will ultimately collapse. The choice of banks in levying interest charges to cover up costs is limited only to the extent of about 13 per cent of deployable banks' resources. The banks have now come up against the restriction in the form of ceiling on maximum interest rate to be levied on lending.

The mix of deposits growth during the seventies has further aggravated the problem of our banks. It has changed more in favour of term deposits with longer maturities which carry higher costs. The proportion of fixed deposits in the total deposits has gone up. If the trend persists then even without a further increase in the deposit rates, interest costs of banks are likely to accelerate in proportion to the total costs. The situation has to be corrected in the decade of eighties—sooner the better. Although there is need to strengthen the financial position of banks, neither the Government nor banks appear to be willing to take hard decisions for improving profitability. Since banks are increasingly taking up riskier finance for rural development and priority sector etc., it is imperative that they have a larger cushion of their own resources.

The public sector banks have lately assumed new responsibilities for helping small entrepreneurs who set up viable projects. They assist them by providing guidance in commercial and technical matters. This package of advice and active help is available in the form of consultancy and development srevices. The scheme for rendering this service is in various stages of implementation by these banks. It is, however, important that deterioration in the quality of service is stalled and measures to tone up efficiency are adopted. There are complaints of inordinate delays in collection of bills and cheques, in the issue of periodical statements of accounts, non-compliance of standing instructions, etc. There is no adequate follow up of loans and advances though this work has now assumed greater importance

*Lecturer in Economics, Motilal Nehru College, New Delhi.

The expansion of new services by banks requires specialised skills that should be entegrated effectively with the basic bank management structure. Perspective planning in banks has now to be more disciplined and systematic without losing the sense of flexibility and entrepreneurial flair. A more imaginative approach to marketing and selling the banks' services becomes essential. The development of new services will accelerate customers' needs in future. The banks will have to face more challenging tasks in this decade. In fact, they are now becoming virtually "financial super-markets". The over-head costs are increasing. Therefore, more effective staff utilisation at all levels is important since staff cost, a major expenditure in banks, will get further escalated in future through more employment.

Bankers feel that today there are limited opportunities for getting adequate yields because a large chunk of banks' resources is tied up in statutory preemption (which is more than 50 per cent of their total resources). Therefore, the opportunity for improving the return on a small chunk of freely deployable resources into private sector should not be further squeezed by subjecting such lendings to an interest rate ceiling. If the present policies to direct banks' resources into unremunerative avenues such as the concessional rates, etc., continue, the banks will eventually be pushed into a situation where they become totally dependent on the government subsidies for their survival. There does not appear to be any sound reason why the bank funds to medium and large industry as also wholesale trade are lent with a ceiling interest rate of 15 per cent. Our efforts in the eighties should be to see that in keeping with the Government's economic philosophy, the traditional sector is made to pay for development of the hitherto neglected sectors.

It is also necessary that the banking industry utilises the services of consultants, advisers, experts in management, behavioural science, operational research and so on. Banking, like other organisations, cannot operate solely with an operational banking 'line' management. There is also a 'staff' function which consists of a number of specialised service departments on whose experience and expertise the bank management can usefully draw.

Promotion policies of banks should take into account the performance of employees in the field of customer service. In the era of nineteen eighties, a systematic study of customer service in all its aspects may be made so as to implement the new decisions from the beginning of the new decade. A massive programme for cost control should be undertaken by tracing and utilising all transit funds by curtailing administrative expenses and by controlling superfluous expenditures. Let Indian banking have new organisational structures by rehashing the total ethos of the industry and the niche of its employees. □

Lead Bank Scheme in Garhwal Region

Vivek Minocha and P. L. Joshi *

THE rationale behind the lead bank scheme was that planning in order to be effective should be formulated at the local level, as close to the people as possible with the feel of the local people, as well as to be able to condition itself to local needs.

Tehri Garhwal and Uttarkashi, the two backward hill districts of Garhwal region were alloted to the State Bank of India as lead districts. As a first step, the lead bank conducted a survey of the two districts during 1973-74 to assess credit gaps, identify growth centres and estimate deposits potential. The lead bank prepared credit plans envisaging such schemes as could be implemented within the existing facilities or by marginally strengthening the infrastructure during the period 1974-75 to 1978-79.

* Reader in Delhi School of Economics and lecturer in Commerce Garhwal University, respectively.

While formulating these plans, the development plans evolved by the district authorities were also taken into account. It was expected that the district authorities would improve the infrastructure such as land development, extension services, provision of veterinary, irrigation, storage and marketing facilities. On the other hand, banks were to strengthen their organisational structure and each block would have at least one branch of the commercial bank. Lastly, there would be a close liason between the district authorities and the financial institutions for co-ordinated efforts towards planned development of the districts.

Branch Expansion and Population Served

In July 1969, Tehri-Garhwal had two branches and Utarkashi one branch of State Bank of India. In December, 1976 when the credit plan was launched, the number of branches increased to nine in Tehri Garhwal and 12 in Uttarkashi and further went up to 13 in Uttarkashi and 16 in Tehri Garhwal in 1978. The population served by the banks in 1969 was 1,78,000 in Uttarkashi, and 2.23,000 in Tehri Garhwal in 1967 and in 1978 about 11,370 people in Uttarkashi and 24,211 in Tehri Garhwal were served per branch. The State Bank of India has now 20 branches in both the districts. All the new branches were opened in rural areas to meet the immediate credit needs of the villagers and to mobilise the rural resources. In Tehri-Garhwal, the Union Bank had three branches in June, 1976 and it opened two more branches up to June, 1978. In Uttarkashi it was allotted two unbanked centres but it has not opened any one. The reason may be that the bank does not want to go into the remote areas for operation as the bank authorities argue that the potential centres have already been occupied by the lead bank.

There is appreciable increase in the deposit mobilisation in Uttarkashi and Tehri-Garhwal, by 37 per cent and 99 per cent respectively. In Tehri-Garhwal commercial banks have already achieved 99 per cent of deposits estimated at the close of the plan. Upto June, 1978, the share of the State Bank of India alone was Rs. 113.66 lakh in Uttarkashi and Rs. 134 08 lakh in Tehri Garhwal. The reason is that the State Bank of India controlled almost the total business of the Government offices and there is a fundamental change in the saving habits of the rural people.

But on the advances side, it showed a gloomy picture. The directions of Reserve Bank of India to the commercial banks to deploy 60 per cent of deposits mobilised from area apart from the stipulation that one third of their total advances should be channelled to priority sectors had no effect on the banks. Observing the huge amount of deposits mobilised by the commercial banks only one-third is advanced in Uttarkashi and one fifth in Tehri Garhwal.

Up to June, 1978, 113 villages were adopted in Tehri Garhwal, out of which the State Bank of India adopted 80. In Uttarkashi State Bank of India adopted all the 162 villages out of which 82 villages were actually financed

Financing to Agriculture Sector

Agricultural practices are traditional and 85 per cent of the land holdings fall below two acres in both the districts. As the holdings are terraced there is little scope to increase the agricultural productivity The table below highlights the position of agricultural financing in both the districts.

The District Co-operative Bank is leading in almost all the schemes to promote agriculture production in both the districts It has achieved more than 65 per cent of its targets against crop loans Whereas the performance of the lead bank and other commercial banks is dismal. In Uttarkashi the lead bank has achieved 7.5 per cent and 0.44 per cent in Tehri Garhwal. The reason why the commercial and lead banks have not been able to achieve their targets is that the co-operative societies are established far in the interior places whereas the commercial banks have no access to far flung areas. The Land Development bank in Uttarkashi has not financed any orchadist whereas in Tehri Garhwal it has achieved 32.04 per cent of its share. The Horticulture Department is giving loans to the orchadists in both the districts on more favourable terms than what the banks can offer. The performance of the lead bank in both the districts is not satisfactory as it had achieved 28.4 per cent in Uttarkashi and 29.9 per cent in Tehri Garhwal. In the field of dairy farming, all the commercial banks and co-operative banks have overshot the targets in both the districts. The co-operative banks against a target of Rs. 6 lakh have financed Rs. 44.29 lakh in respect of a dairy farming in Uttarkashi. But the milk production has not increased sufficiently, for the cattle are not purchased from outside and the feed is not available easily and at reasonable prices. One of the important feature of agricultural financing by the commercial and co-operative banks is that 76 per cent of the total loans have gone to the farmers holding lands below two-acres in both the districts.

Financing the Industries

Of the total credit only 7.9 per cent and 14.6 per cent in Uttarkashi and Tehri Garhwal districts respectively have gone to small scale industries The industrial sector presents a gloomy state of affairs. There is not even single large and medium scale unit in either of the districts. About 140 units function in both the districts. The carpentary units, printing presses etc have received loans Lime and wood units are flourishing in both the districts because the raw

Table

(Rs in lakhs)

Bank		Crop loans		Allied activities		Total		Percentage	
		Uttar-kashi	Tehri Garh-wal	Uttar-kashi	Tehri Garh-wal	Uttar-kashi	Tehri Garh-wal	Uttar-kashi	Tehri Garh-wal
1	2	3	4	5	6	7	8	9	10
Lead bank	Share	23 52	8.95	94.95	28.64	117.97	37.59	..	
State Bank of India	Lending	1 78	0 04	31.77	11.22	33.55	11 26	28.44	29.95
Other commercial banks	Share	4 54	9.34	22.34	27.26	26.88	36.60	..	.
	Lending		0.12	.	8.92	..	9.04	.	24.7
District co-operative Bank	Share	252 72	185.27	132.65	13.75	385.37	119 02	..	
	Lending	152 78	121 30	65.44	30 96	218.22	152 26	56 62	76 5
Land development bank	Share	.	..	..	47.29	..	47.29	..	.
	Lending		..	..	15.15	..	15 15	.	32 04
Total	**Share**	**280 78**	**203.56**	**249.44**	**116.94**	**530.22**	**320.50**	..	..
	Lending	**154.56**	**121.46**	**97.21**	**66.25**	**251.77**	**187.71**	**47.48**	**58.6**

materials are readily available on the spot. The commercial banks did not extend their schemes to attract these industries. Skilled workers are not available and the forest policy of the Government for providing raw materials is not clear. These difficulties defer the intending entrepreneurers to start a unit. The dismal performance of the banks in financing agriculture and small scale industries emphasises the need to reorient their lending schemes and policies, suitable for the development of the hilly areas of the two districts. □

Wealth from Agro Industrial Waste

Madhu Bala*

TODAY it is technically possible to recover atleast two-thirds of the resources that most people waste. With some thrifty life style changes in using products designed for durability and for case of recycling the waste streams of the industrial world could be reduced to a small fraction of their current size. And with an intelligent materials policy the portion of our resources that are irretrievably dissipated could eventually be reduced almost to zero.

In addition to reed, straw, corn cob and stalk, many other non-traditional wastes, such as coir fibre, coconut husk, groundnut husk rice husk, jute sticks and bagasse are obtained as industrial wastes. They are mostly disposed of by incineration or used as fuel. although their calorific value is much below that of coal. Utilization of these wastes, apart from solving the problems of disposal, would improve the agricultural economy considerably.

The building materials industry has the maximum potential for the utilisation of these wastes through their conversion into various kinds of building blocks and panels; this will also relieve pressure on the conventional building materials. Blocks and panels prepared from agro-industrial wastes have the advantages of being light in weight and possessing good thermal insulation properties.

Statistics regarding the estimated annual production and the physical states of various organic waste materials are given in the table.

Coconut husk and byproducts

Coconut husk.—The current annual production of coconut in India is estimated at 5,600 million nuts. It is expected to rise further. About 50 per cent of the husk is used for fibre extraction and rest is either used as fuel or thrown as waste. Taking the dry weight of the husk of one nut at 0.3 kg., roughly 84,000 tonnes of husk are available as a potential raw material.

Coir Wastes.—The coir fibre is extracted from coconut husk by the natural retting process and by mechanical decortication. It is classified into different commercial grades, depending on their quality. It is a tough, strong, resilent and durable material. The bulk density of the fibre is between 0.25 and 0.5 g/c. depending on its compactness. It finds use in the preparation of ropes, mats, carpets, etc. Large quantities of coir waste are, however, obtained from various coir processing units in the form of coir dust, coir baby fibre, rubberized coir pad, etc.

*Senior Scientific Assistant, Publications and Information Directorate, (CSIR) New Delhi.

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Estimated Annual Production and Physical State of Different Agro. Wastes

Waste	Source	Approx. annual availablity (m. tonnes)	Phsiycal state at the time of primary disposal
Coconut husk	Orchards and vendor shops	0.85	Elliptical not with tough skin
Coir waste	coir fibre industry	0.70	Fibre and granular pith
Saw mill waste	Saw mill and wood based indu-ustries	18 20% log volume	Fine powder, wood shavings bark
Bagasse . . .	Sugar Industry	4 (bone dry basis	Fibrous crumbles
Jute Sticks	Jute Industry	3 (W. Bengal only)	Light sticks
Groundnut husk . . .	Groundnut oil mills	2.5	Broken fibrous shell
Corn cobs and stalks . .	Govt. farms	—	Weak, small and flexible, thin sticks
Rice husk . . .	Rice mills	12—14	Glazy and bard hulls and partially burnt powder.

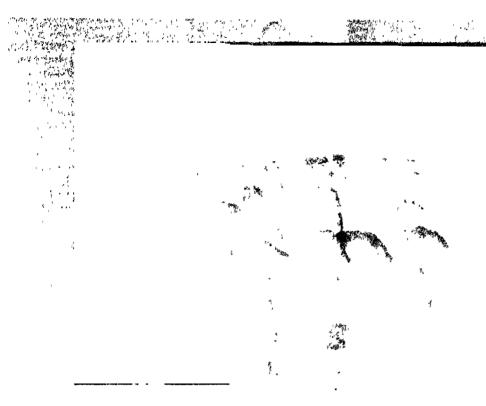
Coconut pith.—The husk of a mature coconut consists of numerous fibres embedded in a soft cork-like ground tissue usually referred to as pith. The pith is made up mostly of pectins, tannins and other water soluble substances and hemicelluloses. During the retting process, the pectins and tannins are dissolved out and most of the hemicelluloses get decomposed. The composition of the pith, therefore, changes radically and consists mostly of lignin and cellulose. The bulk density of the air dried pith is between 80 and 110 kg./cu. m. It is usually grey in colour and contains some fine sand of the locality where it is produced. The annual availability of pith is about 5 lakh tonnes. Considerable work has been done during the last 15 years at the Central Building Research Institute, Rorkee and the Forest Research Institute, (FRI) Dehdradun on the utilization of coconut husk and by-products. The material has not been found suitable for making paper pulp. Particle boards, insulation boards and hard boards have, however, been successfully made from them with and without the use of binders. As a part of a programme to study the utilization of various wastes from coconut tree and coconut in an integrated manner, Polytechnology Transfer Centre (PTC), Trivandrum, has been looking for technologies for processing coconut shell waste and pith or making carbonized briquettes and activated carbon besides their use as fillers, materials for boards, blending with clay to make light weight blocks with fuel saving, etc. With the setting up of large coconut complexes under the Kerala State Coconut Development Corporation, a unique opportunity is offered to an integrated approach as materials and wastes flow in an organized manner.

Wood Wastes.—Saw mills and the various mechanized wood working industries produce large quantities of wastes, such as wood shavings and strand, sawdust and bark. Wood shavings from soft wood are obtained for making cardboard, etc., in the Netherlands and for making dry chip boards in England. Recently, they have found use in the preparation of composite wood cement blocks.

In general, the bark content of the unbarked slab is 20—25 per cent. In plywood factories, it is thrown out as a waste. However, some manufacturers use unbarked timber for manufacturing fibre and particle boards The presence of bark creates certain problems in processing; the properties of the resultant products, are also affected adversely. Recent investigations have demonstrated that with a few exceptions like dark colour and dark spot, bark upto 25—30 per cent in the raw material does not affect to a large extent the production and quality of fibre and particle boards.

On an average 100—150 kg. sawdust is produced for every cubic metre of wood sawn. It is primarily the high transportation costs and technical difficulties in the mills which obstruct the use of sawdust as a supplementary raw material in the manufacture of fibre boards. Only factories near saw mills can utilise this raw material in an economic way. Sawdust is used mostly as a fuel.

Preliminary experiments have shown that in the manufacture of boards, up to 20 per cent ordinary chips may be replaced by sawdust without affecting their quality. Sawdust has also been used for making moulded articles and wood flour for the plastics industry.

Bagasse.—The material as received from sugar mills contains, in addition to fibre and pith cell 46-52 per cent moisture. In dry bagasse, the fibre content is about 65 per cent and pith cell 35 per cent. The fibres are fine, strong and flexible and possess

Particle boards, insultation boards and hard boards have been successfully made from coconut husk in Kerala.

little resistance to prolonged chemical action. The annual availability of bagasse is estimated at 4 crore tonnes/yr (bone dry process) and it may rise further with the expansion of the sugar industry. Most of it is used as fuel to heat the boilers. If the entire production of bagasse is put to proper use, it can be converted into 70 lakh tonnes of paper and newsprint valued at Rs. 800 crore.

Mandya National Paper Mills is using 90—95 per cent of bagasse for good writing paper. Recently a 20 per cent plant for kraft paper for packing has gone into production at the cooperative sugar factory. There is ample scope for effecting economy and reducing bagasse requirement to less than 20 per cent net on cane and thus generating surplus. A 20-tonne per day paper plant can operate round the year with bagasse saved on a 2,000 tonne/yr cane capacity worked for 150 to 180 days.

Jute Sticks

Jute sticks left after the extraction of fibre from the jute plant are light in colour, have few branches and are practically solid at the bottom, but hollow upwards. The girth varies from 2.5 to 7.5 cm at the bottom and from 0.5 to 1.0 cm at the top. The sticks are extremely light, weighing 65—90 kg./cu. m. in bulk and having sp. gr. between 0.20 and 2.25.

Jute is cultivated mainly in West Bengal, Assam, Tripura, Orissa, Bihar and U.P. Nearly 3 million tonnes of jute sticks are available from West Bengal alone. At present, it is used for thatching roofs, fencing gardens and as a fuel. However, considerable quantities are just allowed to rot or waste away. It has recently attracted attention of Indian paper industry, and exhaustive work has been carried out on the pulping of jute sticks at the FRI, Dehradun. It has found limited use in the preparation of printing paper.

The possibility of using jute sticks for making chip boards has been examined recently and encouraging results have been obtained.

Groundnut Husk.—India is the largest producer of groundnut in the world, the main producing areas being Davangere (Karnataka), Kurnool and Adoni (Andhra Pradesh), Jamnagar (Gujarat), Latur (Maharashtra) and Sitapur (Uttar Pradesh). It's production is estimated at 8.5 million tonne per year. Groundnut husk, obtained by the decortication of groundnut pod constitutes 20—40 per cent of the pod by weight. It is light (bullks, density 0.13 g/c.c) and contains high fibre and cellulose contents. Except a slight outer discoloration as a result of wetting, the husk remains undamaged in the open. The husk is used mainly as fuel, although its calorific value is one-third that of coal. Its other industrial uses are as fuel for brick making and lime burning and in packing.

Investigations at the FRI, Dehradun, have shown that the husk is unsuitable for the manufacture of paper straw board. On the other hand, extensive laboratory and field investigations have indicated that good prospects exist in India for making particle board from it. However, due to the prohibitive cost of the synthetic resin binders (urea formaldehyde and paraformaldehyde) required in the manufacture of particle board, it is not profitable under the present circumstances.

These materials are mostly used as cattle fodder. Rice straw and a few grasses have found some use in making paper and paper board. Rice straw has also been used as a reinforcing material in the preparation of mud plaster and mud fuska. Reed and grass are unsuitable for making particle board. They impair the quality of the board due to low uptake of glue on account of their glossy skin.

Rice Husk

Rice production is estimated at 50 million tonnes/yr. The husk constitute about 25% of the paddy and thus 12-14 million tonnes of husk per annum are available, mainly in three forms—completely burnt kernel, roasted kernel and unburnt kernel. One tonne of rice husk yields about 500 kg. of ash. Completely burnt rice husk has found use in the preparation of sand lime bricks. Rice husk blocks have also been made from ash-lime-cement (5:4:1) mixture using a suitable catalyst. The glazed unburnt husk has found limited use in the preparation of concrete blocks using normal portland cement as a binder. It can be used in the preparation of structural components.

Arecanut husk:—Arecanut is produced mostly in Kerala and Karnataka States. It is a shorter fibred material. According to an estimate of Indian Central Aercanut Husk Committee, the total availability of this material (on dry basis) is one metric tonne/yr. If contains about 65 per cent cellulose and 27 per cent lignin. Potentially arecanut huck can be utilised for the purposes such as hard boards, paper insulation wood, plastic material, as a source of furfural and agricultural uses.

Information Gap:—Reducing the cost of recycling through the choice of proper technologies would therefore require careful attention of all the concerned agencies—the government, the research institutions and the industry. This in turn requires a constant watch on the internal scene where the work of recycling is being carried on a vigorous scale. It appears that there is considerable information gap in this regard. In view of the global nature of the problem we have to keep ourselves in constant touch with the developments taking place elsewhere in the world and profit from their experience. In India too some worthy steps have been initiated in this direction.

An instance of this is found in the reported process evolved by the Regional Research Laboratory (RRL), Jammu, a unit of CSIR. The process involves use of the forest wastes of Jammu, viz., pine needles and converting into fibre boards and packing cases. Jammu and Kashmir have an area of 1.5 lakh hectares under pines. With an overall seasonal fall of about 1 tonne per hectare, the availability of pine needles is estimated at 1.5 lakhs tonnes per annum sufficient to have as many as 300 units of 2 tonnes a day capacity. The region being a major fruit producing state, the need for packing cases is all the more great. Such an alternate step would help the state in conserving the precious timber besides using the waste forest produce. Needless to stress employment opportunities to local people would increase to a large extent.

Then there is the process developed by RRL, Hyderabad, for converting waste plant resources into vegetable oils and waxes. Cotton seeds on processing are reported to yield valuable products as linters, hull oil, soapstick and cake. Cotton linters are refined to prepare chemical cotton which is used in a number of products as a source of cellulose. Hulls are used as cattle feed. The National Chemical Laboratory (NCL), Pune, has obtained wax from sisal as a substitute for the imported carnauba wax which is not produced in the country. Sisal wax produced by NCL process can be said to replace carnauba wax in the preparation of polishing compositions for shoes and cars. Among the developing countries, India is perhaps the only country which is aware of the need for minimizing pollution at an early stage by profitably reusing waste matters through recycling Several steps have been taken at various levels for implementing pollution control measures and encouraging industries and urban centres to treat and reuse various effluents. However, from the perspective angle emphasis has to be on the choice of new technologies which minimize the generation of pollutants in the first place rather than spending large amounts on preventing the after effects of pollution. □

Irrigation under Ex-Malguzari Tanks in Maharashtra

A. R. Kasture*

MAHARASHTRA State lags behind in the development of irrigation facilities. Only about 8.9 per cent of the net cultivated area is irrigated (1974-75) whereas the national average is about 25 per cent.

Of the 26 districts, Bhandara district with 39 per cent and Chandrapur district with 16 per cent of the net cultivated area under irrigation rank first and second respectively in the State. Paddy is the most important crop grown in these districts and together account for about 37 per cent of the area under paddy and about 77 per cent of the irrigated paddy in the State. The soil-climatic conditions are best suited for paddy cultivation but irrigation is required against the frequent failures or late monsoon. About 50 per cent of the area under paddy is irrigated of which about 79 per cent is under tank irrigation. Thus these tanks called "ex-Malguzari tanks" are great assets for these districts.

The tanks were constructed some 300 years ago by the then malguzars and patils. Some of the tanks belonged entirely to malguzars and irrigated only their fields while some others were used for irrigating fields

*Lecturer, Mahila Mahavidyalaya, Amravati.

of other cultivators also. These tanks were being repaired by the beneficiaries whose efforts were coordinated by the malguzars. As against this liability, cultivators had a right for free use of water.

With the abolition of proprietory rights in 1951, all the 6927 malguzari tanks with an irrigation capacity of 2,39,792 acres had been transferred to the State Government. They are now called ex-malguzari tanks. All tanks are managed by the Zilla-Parishad except 128 large tanks irrigating more than 250 acres each which are under the State government while the remaining small tanks have been transferred to Zilla Parishads.

Financial Loss to the Government

The tanks, due to long neglect, needed repairs and hence were renovated by the government and Zilla Parishads. About Rs. 7 crore have been spent on renovation since 1960. Further, government appointed a Patkari (labour) on each tank for managing irrigation. Also seven rupees per acre is spent for maintenance purposes to avoid damage to the tanks.

It appears strange that with all this investment and recurring expenses on these tanks, the government cannot collect water for irrigation because the cultivators still have rights to use the water free of charge. After renovation, there has been some increase in the potential of these tanks, but the free right holders normally do not allow other cultivators. And thus deprive the government of revenue. As a result the government is suffering heavy losses annually. The loss of revenue can be seen from the table :

Loss of Revenue

Year	Loss Rs. per irrigated acre	Amount of loss (Rs. in lakhs) on 2,39,792 acres
1972-73	8	11.80
1973-74	10	23.97
1974-75	12	31.15
1975-76	15	35.96
1976-77	18	42.26
1977-78	20	47.96

It is interesting to note that the beneficiaries insist on getting the water free of charge, but are not willing to accept the responsibilities of repairs (which they did under malguzari system) so repairs are carried out by the free right holders.

As recommended by the Maharashtra State Irrigation Commission (1962) it appears necessary that rights of getting water from these tanks free of charge (Nistar rights) should be removed to avoid huge losses to the public treasury.

Management

The inefficient management of tank irrigation is another aspect that needs considerable attention. Here centuries old flood methods of irrigation are still practiced, which result in 70 to 80 per cent wastage of water.

In the flood method the fields are continuously submerged in water because the cultivators believe that it would increase the yield.

The Central Rice Research Institute Cuttack, have proved that submergence of land is beneficial to the rice crop only upto 4 cm height. It has also been estimated that efficiency of irrigation in paddy cultivation could be increased three times by adopting proper methods of irrigation.

Due to the flood method of irrigation, the cultivators at the tail-end do not get sufficient water for their fields and those near the tank-beds suffer from over-irrigation. The result is that inspite of irrigation, the productivity is very low in these districts, as compared to the State average. For instance in 1974-75, the yield of paddy per hectare was 767 kg. and 723 kg. for Bhandara and Chandrapur districts respectively, whereas the State average was 1078 kg. Due to this low productivity, under the prevailing prices of inputs and outputs, paddy cultivation is proving almost uneconomical in these two districts. Considering the above fact, it is obvious that the efficiency of irrigation needs to be increased by constructing field channels. The Irrigation Commission (1972) has rightly recommended that "effective steps be taken to gradually replace field to field irrigation of rice by the system of field channels. This helps to bring more area under irrigation. Proper water management practices together with the adoption of better methods of cultivation would enable the farmers raise bumper crops.□

Irrigation In Uttarakhand

Dr. N. S. Bist *

THE irrigation facilities in the hilly Uttarakhand region of U.P. are meagre and are extended onl to 21 per cent of the net sown area. That too is inclusive of the high percentages of irrigated areas of Dehradun and Nainital districts.[a] The total sown area in Uttrakhand is 670,863 hectares out of which 1,41,222 hectares form net irrigated area.

*Head of Economics Deptt; Garhwal University Srinagar (Garhwal) U.P.

In the Nainital district the maximum percentage of land (40.9) is irrigated. Next comes Dehradun district with 30.9 net irrigated land. The third place goes to Uttarkashi district where the irrigated land in valley area is 14.6 per cent of its net sown area. Tehri-Garhwal stands fourth with 14.0 per cent. The least irrigated land is in Chamoli with only 4 per cent of the net sown area, even though the mighty rivers

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TABLE 1

PHYSICAL TARGETS AND ACHIEVEMENTS UNDER

IRRIGATION IN UTTARAKHAND

(FIFTH PLAN)

(000, hectares)

ITEM	Target	Achievements				
		1974-75	1975-76	1976-77	1977-78	Total
Private Minor Irrigation (Addl capacity created) . .	42.00	7.01	7.29	9.07	8.55	31.92
State Irrigation (Addl. Capacity created) . . .	55.35	9.11	9.41	8.16	7.59	34.27
Total	97.35	16.12	16.70	17.23	16.14	66.19

Alaknanda, Dauli, Nandakini, Pindar and Mandakini flow across the area. Since these rivers flow in deep valleys, their water cannot be economically utilized for irrigation. The net irrigated land area comes to 9.2 per cent and 9.0 per cent in the Pithoragarh and Pauri-Garwal district respectively.

The per family net irrigated land is 0.54 acre which is nearly equal to the average per capita agricultural land (0.50 acre) whereas per capita average irrigated land is only 0.11 acre, which is not sufficient even to grow vegetables.

Efforts to increase irrigation facilities

In the fifth plan (1974—79), for the development of irrigation in Uttarakhand Himalaya Rs. 1,545 lakh were allocated for minor irrigation, out of which Rs. 255 lakh and Rs. 1,290 lakh were for the development of individual/private and state irrigational activities, respectively. For the large and medium scale works (canal irrigation), the proposed allocation was Rs. 883.51 lakh which was 37 per cent of the total outlay of Rs. 2,431.81 lakh.

For the development of minor irrigation the amount spent was Rs. 185.91 lakh during four years (1974—78) of the plan. On the construction programme executed by the State under the minor irigation the percentage of expenditure was 60.4 (Rs. 779.43 lakh out of Rs. 1,280 lakh) During the year 1977-78, a special programme was launched to instal 55 hydroms/sprinklers at suitable sites to boost the minor irrigation and Rs. 55 lakh were allocated in the year 1978-79 for furthering the programme. Three hydroms have been installed by the Planning Research and Action Institute, Lucknow on an experimental basis in the three districts of Uttarakhand Himalaya.

Under large and medium irrigation, the Kosi project, the Kosi valley project, the Haripura project, the Ramganga valley project, the Laster valley project and the Khatima irrigation project have been taken up. During the first four years of the fifth plan, the expenditure was Rs. 621 lakh against the allocation of Rs. 886.81 lakh.

Against the proposed target of 42,000 hectares of additional capacity of private irrigation 31,920 hectares (76 per cent) had been brought under irrigation during the plan period (1974—1978). In case of State programmes, 34,270 hectares of land was brought under irrigation (61.8 per cent) against the target of 55,350 hectares. The plan was able to bring 66,190 hectares under irrigation but this is only 68 per cent of the proposed target of 97,350 hectares of additional irrigated land.

Under the minor irrigation schemes pakka gools, deep boring pumping sets, rahat, individual pumping sets, community pakka wells and private wells construction had been encouraged in the plain areas of Dehradun and Nainital only. These programmes could not be carried out in the hill areas of Uttarakhand because of the rocky land when only kachcha & pakka goods, canals and water tanks construction can be undertaken. Against the target of 7,855 hectares in the fifth plan, only 5,855 hectares (76.1 per cent) could be brought under irrigation by constructing kachcha and pakka gools and canals. The advantage of large and medium scale irrigtion goes to the plain areas of Dehradun and Nainital districts. That is why these districts have the highest percentage of irrigated land.

Thus large and medium scale irrigation projects are not suitable to increase irrigated land in hilly tracts of Uttarakhand. Only when the river waters are pumped up to a height of more than 1,000 feet, the Uttarakhand area can become lush green. If something is to be done for the agricultural development of Uttarakhand hills the planners and executors should reorient their efforts in the light of realities existing there. □

Water Pollution —A National Problem

V. Haraprasad*

NON-AVAILABILITY of potable water has become a major problem in almost all the developing countries including India. In our country out of about 2,600 urban areas reasonably good quality water is supplied in about 2,000 centres only, and of 5,76,000 villages, people living in only 64,000 rural places have access to drinkable water. The available sources of water supply are fast getting polluted with the industrial wastes and sewage on account of the unrestrained urbanisation and industrialisation.

Even in nature, chemically pure water does not exist. Rain-water, as it reaches the earth, dissolves in itself some of the atmospheric gases and suspended particulate matter. Organic impurities of decaying carcasses and vegetable matter are also found in natural water.

The chief sources of water pollution namely community of domestic and industrial wastes contain different water-borne germs organic matter, oils, detergents, sediments, radioactive substances, and so on. The pathogenic organisms in the community wastes cause cholera, typhoid, paratyphoid, gastroenteritis, bacillary dysentery, infectious hepatitis and other diseases.

In India, about 2.5 crore people in 34,000 villages are endemic to cholera; 18 lakh people of 3,000 villages are infected with guinea worms. The death rate due to dysentary is 9.6 and 16.5 per thousand persons in the urban and rural areas respectively.

The organic and chemical matter discharged by the industries into rivers depletes the dissolved oxygen present in the natural water and objectionable smells arise due to the evolution of Hydrogen Sulphide.

Oil, let out into rivers spreads to form a thin film on the surface of water preventing the diffusion of oxygen. This interferes with the reacration of river water which is essential for its "self-purification" process. If the stream is used as a source of water supply, the presence of oil creates taste and odour problems besides being expensive to treat.

Detergents cause masses of foam on the rivers and at sewage treatment plants and upset the treatment processes, with the result that they find their way into the public water supplies as well. Radioactive pollution of streams is of recent origin. Radioactive waste-waters emanate from atomic energy establishments, hospitals and industries using artificially produced radioactive isotopes for research and other purposes. The disintegration of radioactive elements involves the release of many different types of radiations highly dangerous to human beings, animals and the plant kingdom.

No less significant is the pollution on account of insecticides and pesticides emanating from the agricultural wastes. They find their way into the water courses and eventually into the fatty tissues of living creatures in and around the water. Oysters are known to concentrate, in themselves, 70,000 times the insecticides from water. This is known as "biological magnification" of the insecticides. When man ingests those oysters, his nervous system is affected for the insecticides act as nerve poison.

"Eutrophication" is another facet of water pollution caused by the presence of excess nutrients. Phosphorous, Nitrogen, Potassium, etc., are the nutrients required for the growth and sustenance of algae and other plants in a lake. As the polluted lake becomes rich with these nutrients, water weeds become abundant and thick mats of blue-green algae are formed. The dead algae matter decays and depletes the "dissolved oxygen" in the water. The water becomes useless for drinking.

Preventive and Control Measures

Though the above aspects of water pollution are only selective and not exhaustive, they highlight the need for proper preventive and control measures to be adopted. The State of Maharashtra took the lead to enact the first Water Pollution Control Act, 1969. Subsequently "The Water (Prevention and Control of Pollution) Act, 1974" was passed by the Parliament and the Central Board for Prevention and Control of Water Pollution established. A number of States have since established similar Boards.

The primary function of the Central Board is to promote cleanliness of the streams and the wells in different States and to advise the Central Government on any matter concerning the prevention and control of water pollution. The Central Board coordinates the activities of the State Boards and provides technical assistance and guidance to carry out research relating to the prevention, control or abatement of water pollution. Another important activity of the Central Board is to collect, compile and publish technical and statistical data relating to water pollution and the measures devised for its effective control and to disseminate information connected therewith. To fulfill the objective it plans and organises the training of personnel engaged in the water pollution control activities.

Some of the functions of the State Boards are to inspect the sewage works or trade effluent works to review the plant specifications or other data relating to the plants set up for the treatment of water, and so on. They can lay down, modify, or annul effluent standards for the sewage and trade wastes and for the quality of the receiving waters and classify waters of

*Freelance writer.

the State. The State Boards also advise the State Government on whether the location of any proposed industry would pollute a stream or well, or a tank. They are empowered to obtain information, take samples, enter and inspect the various avenues of pollution, refuses or withdraw the consent given and to make application to courts for restraining apprehended pollution of water in streams or wells and to take emergecy measures in case of pollution.

Realising the need to preserve our natural water resources, the Indian Standards Institution had published many criteria and tolerance limits for different types of wastewaters which can be disposed of by different methods. Scores of professional associations and voluntary agencies are also involved in the endeavour of liberating our waters from pollution. Notable among them is the Indian Association for Water Pollution Control.

Reuse of wastewaters is one of the methods of containing water pollution and continuous research in this field is being carried out in some state Government Departments and in some Central Laboratories. The National Environmental Engineering Research Institute (Nagpur) with its nine Zonal laboratories spread over the length and breadth of India is actively engaged in evolving appropriate technological solutions to contain the environmental pollution in the country. Apart from the R & D activities the Institute also conducts Refresher courses on "Water Pollution Control" for practising engineers and Scientists. The Sewage Reclamation Research unit of TWAD Board, Madras has been carrying out research studies in the reuse of sewage and industrial effluents and low cost waste treatment methods for over a decade now.

For effective water pollution control, it is essential to have a system of adequate collection, treatment and disposal of community wastes which could otherwise pollute the natural water resources. With this objection in view an expenditure of Rs. 815 crore has been made in the five year plan outlay 1978—83 for urban water supply and sewerage including water Pollution Control.

A sound system of water pollution control results in the preservation of the aquatic biota, lower water treatment costs, savings in the avoidable expenditure on medical services for patients suffering from water-borne diseases, the creation potential of water bodies, etc.

The question of water pollution control assumes additional importance on the eve of the International Water Supply and Sanitation Decade, 1980—1990 in which period national plans for drinking water supply and better sanitation are to be implemented more extensively. Whatever be the scheme, the researchers and the Government launch to prevent water pollution, active involvement by the people is necessary. Private clubs, science associations, youth organisations, in addition to the Government agencies, should come forward to educate the people particularly in the rural areas. □

The Impact of Gulf Money on the Kerala Economy

Inspite of high literacy level and rich natural resources Kerala continues to be an industrially backward State. But the Gulf boom which was at its crest till recently altered the picture quite dramatically. The total remittance by the residents in gulf is estimated about 20 per cent of the Gross Income of Kerala. A gain of this nature under normal circumstances should have resulted in higher savings and investment, which, it appears, is missing in Kerala.

P. V. Rajeev*

A SURVEY conducted by the Bureau of Economics and Statistics revealed that there are about 1.5 lakh Malayalees working abroad. This is generally considered to be an under-estimate and for our purpose we take the number as two lakhs. Further it has been generally accepted that the total annual remittance by Malayalees abroad lies within the range of Rs. 300 crores to Rs. 500 crores. We consider Rs. 400 crores of annual remittance to be a good approximation.

*Freelance Journalist

We now consider the impact of Rs. 400 crores of annual inward remittance into an economy which would otherwise be having a Gross Domestic Product of Rs. 2,134 crores—the figure for 1975-76. The aggregate result will be that the Gross Income of the people of Kerala will increase by Rs. 400 crores or more—an increase of about 20 per cent. The remittance of Rs. 400 crores of income would go to the dependents and families of the gulf employees. We can estimate that there are 10 lakh such dependents at the rate of five dependents per gulf employee. These 10 lakh dependents who constitute five per cent of Kerala's population have an aggregate annual income of Rs. 400

crores which means that this five per cent of population earns close to 20 per cent of Kerala's Gross Income. Further 10 lakh dependents earning Rs. 400 crores of income would give us a per capita income of Rs. 4,000 which is more than 4 times the state average.

Thus the pattern of income distribution has dramatically changed. A number of families have become rich overnight. With increased incomes of the population there is an increased demand for consumption goods. Keynesian macro economics tells us that increased consumption will lead to increased production and investment activity. But it is very much unlikely that production has increased 20 per cent—as much as income—during the short span of the gulf-boom.

In the absence of increased production, increased consumption demand is being met in two ways. Increased demand is partly met by an inflow of consumer goods produced outside Kerala—in other states of India and abroad. The remaining component of increased demand is met by inflation. It can be seen in particular that prices of those commodities have gone up which cannot be supplied from outside Kerala. As the migrants prefer to return to their home state, and so the price of land has gone up the maximum. Fish and meat are perishable commodities and their supply is local, consequently their prices have increased considerably. Certain forms of specialised labour have become relatively scarce and the wage rate has gone up. But the supply of manufactured goods are met by producers outside Kerala. The supply of such commodities is elastic and their prices vary in accordance with the National Pattern. Prices of cereals like rice and wheat remain comparatively stable because their demand can be met from the central pool.

Inflow of consumer goods from outside Kerala has thus helped to keep inflation in check. But the consumer boom has failed to stimulate production and investment within the state. An important reason for this is that increased consumption demand is, to a great extent, directed towards manufactured goods produced outside the State. On the contrary many of Kerala's established industries depend on an export market which gets very little stimulus from increased local consumption. This gain will be short lived and can last only as long as the gulf boom lasts unless domestic production increases and increased incomes are generated at home.

Lack of Enterprise

Many of those families made rich overnight by gulf money lack the spirit of enterprise to put their incomes to good use. The greater part of the earnings are wasted on luxurous consumption. Perhaps the bulk of the investment that result from gulf money is on land, buildings and jewellery. None of these can be considered to be productive in the long run. The most important ways in which gulf money is being put to use in Kerala may be summarised as follows :

(a) Purchase of Land.
(b) Residential Construction
(c) Investment in Jewellery
(d) Payment of dowry and other martimonial expenses
(e) Luxurous consumption
(f) Productive investment

Purchase of land results in the redistribution of ownership of land but there is no gain to the society at large. The price of land has gone up all over Kerala, but land has by no means become more productive. The increased price of land is a result of a short term increase in demand for landed property. The price and demand for land come down the moment inflow of gulf money stops which cannot but occur some day.

Another type of productive activity that has received notable stimulus is residential construction. Increased construction activity also generates income and stimulates production in other sectors of the economy.

Investment in posh buildings and jewellery may be beneficial to the party concerned. But from the point of view of long term growth prospects of the economy they constitute a sterile investment.

A large portion of the remittance is being utilised for the payment of dowry and to meet other marriage expenses. It is reported from Bombay that demand for gold in Kerala has a noticeable impact on the Indian gold market. This is a relatively new phenomenon resulting from the gulf boom—perhaps it is an indication that Keralites have become net purchasers of gold.

We have already discussed the impact of increased consumption activity. It provides great stimulus to retail trade activity as is evident from the high level of sales tax earnings of the Government of Kerala in recent years. But increased consumption fails to stimulate industrial production and investment to the desirable extent.

Much of the gains resulting from the gulf-boom have only temporary significance. The gains that can be sustained in the long run will be the ones that result from increased productive investment. Only real productive investment can ensure a steady flow of income in the future and improve the long term growth prospects of the economy. All other gains will be temporary and cannot last beyond the period of the gulf boom itself.

The total remittance by residents in gulf countries come up to 20 per cent of the Gross Income of Kerala. A windfall gain of income of this nature will under normal conditions result in higher savings and productive investment. But in the peculiar situation that exists in Kerala, such a phenomenon has not come about. There are several reasons for this :

(1) Many families who earned those windfall gains of income were hithertoo poor. Most of them lack the habit of savings. They are now subject to the demonstration effect and follow the consumption habits of the rich, but are less anxious to ensure a steady flow of incomes in the future.
(2) A vast majority of the migrants to gulf countries are under-educated or semi-literate. Many of them lack the ability or enterprising spirit to start industrial ventures back home.
(3) The Government of Kerala has so far failed to exploit the favourable conditions that has resulted from large scale inflow of gulf money in such a way as to improve the economic prospects of the state.

If as much as 40 per cent of this windfall income could be chanelled to productivity investment and the level of investment in the state could increase 50 per cent from about 16 per cent to as much as 24 per cent of Gross Income. The rate of growth of the economy could thereby be increased by 2 per cent from around 4 per cent to about 6 per cent per annum, assuming a capital-output ratio of four. This is only a rough theoretical estimate, but it never-theless gives a broad hint at what could be possible.

Non-Formal Education for the Tribals of A.P.

K. Mohan Rao*

IN the evolution of educational thought, the important role of non-formal education is progressively spelt out in recent times. The non-formal education programme is launched to create awareness of the problem, to spread functional literacy at quicker pace, to indicate a spirit of self-relaince, self-confidence among the village folk and tribals, and finally, to give a meaningful boost to the developmental activities

The literacy rate among the tribals is appallingly low compared to the national standards. As per 1971 census reports, only 11.30 per cent among the Scheduled Tribes are literates while the literacy rate at the national level was 29.44 per cent. Similarly in Andhra Pradesh literacy rate was 24.57 per cent whereas in Scheduled Tribes only 5.34 per cent were literates as per 1971 census reports. Further among some of the primitive tribal groups of hill areas such as Kolams of Adilabad district, Konds and Porjas of Visakhapatnam district and Savaras of Srikakulam district the literacy rate was less than 3 per cent.

Only 2.13 per cent of the women of the Scheduled Tribes are literate. The general literacy growth rate as per 1971 census registered five per cent more than that of 1961. But during the same period, the growth of literacy rate in the tribal communities at national level is less than three per cent only. In Andhra Pradesh, the growth of literacy rate of Tribals is less than one per cent during the same decennial period.

The programme of non-formal education will be beneficial to the rural poor, tribals and other weaker sections of the society. The term "Non-formal Education" may be substituted by a sociological concept namely, "Guided Socialization" or "Planned Socialization." These terms seem to be more appropriate to describe this type of education rather than non-formal education. Socialization implies a spontaneous or deliberate process of internationalisation of value, beliefs, capabilities, habits, customs and traditions of a particular society in which he or she is born. In the type of education, for elevating the tribals to the levels of developing societies and to improve the "quality of life," the boy or adult is guided to cultivate or learn not only certain skills in 3 R's (Reading, Writing and Arithmatic,') but also to acquire some skill in functional literarcy. The parents mainly take the responsibility of imparting the traditional knowledge and skills to the growing child. Resumption or continuity of internalization of social heritage and improved skills can be effectively achieved in guided socialization. In guided socialization a meaningful and relevant continuity between past and present can be maintained in order to help the hitherto isolated tribal communities with their limitations to adjust successfully to the changing environment with proper cultural foundations.

*Deputy Director (Training), Tribal Cultural Research & Training Institute Hyderabad.

Guided Socialization Programme

Imparting education through non-formal methods is extremely useful to overcome wastage and stagnation in schools besides building up the inner-strength and confidence of tribals and to improve the quality of their life styles and standards. The wastage in education among the Scheduled Tribes in Andhra Pradesh is approximately 74 per cent. The children even in the age group of 8 to 14 years assist the parents in all kinds of agricultural operations, starting from clearing the jungles and sowing to harvesting. As collection, processing and selling of minor forest produce is a good source of weekly income for tribals, the parents take their children along with them to forest for collection of minor forest produce. Sometimes children would go alone to the forest for digging out edible roots, tubers, and for collection of wild fruits, leaves etc., for domestic consumption. They assist parents in the collection, carrying and selling of head-loads of firewood. In short, there is no economic activity in which children do not play a role which enables them to contribute to the family income. In view of the subsistence level of economy of the tribals, children are also made to work along with parents and they are denied opportunities for learning in the formal schools at fixed timings. Further the swidden cultivation, subsistence level of economy and rigorous tribal habit demand intensive labour and hard work. In view of these environmental compulsions, parents force their children to work along with them to eke out their precarious livelihood.

Guided Socialization programmes will certainly facilitate transformation of socio-economic conditions, if these programmes are formulated keeping in view the indigenous customs, traditions and environment. The concept and philosophy of "Socially useful productive work" can fruitfully be pressed into the teaching curriculum of tribal areas. The tribal children can be taught the skills regarding processing of minor forest produce which they collect like tamarind and Adda leaves (Bauhinia Vauhiliti). The leaves are stitched together to form leaf plates to serve food in South India. The tribals prepare baskets, rain-coats etc. out of these leaves. These

re abundantly collected and sold at cheap rates without processing. If this minor forest produce is processed into finished products, they can get better rates for those commodities. The tribal children and youth can be taught improved skills in deseeding, stitching leaf-plates, preparation of brooms, etc., in the non-formal centres of education. There is no problem of marketability of these goods since the net work of Girijan Co-operative Corporation is spread throughout these areas for purchasing all kinds of minor forest produce from the tribals. The additional money thus earned by children can either be paid to the tribal children or to the parents. Moreover if tribal children and youth are imparted improved skills in their day-to-day occupations, they can augment their family income. At the same time they can pursue their traditional occupations on more scientific lines even if they do not continue their education. The non-formal education can be a powerful means to put an end to wide spread exploitation in tribal areas. In view of gullible nature of tribals they are forced to pay exhorbitant rates of interest for the petty loans taken from the money-lenders and merchants. Even in the weekly markets the tribals get less prices for the articles brought by them but they are made to purchase their daily necessities at exhorbitant prices. There are instances of Janata Dhoties being sold at Rs. 25 per pair in weekly market in tribal areas of Khammam district, while the rate prescribed by Government is only Rs. 15 per pair. Similarly the private vendors sell even Revenue stamp of 20 paise at 50 paise to innocent tribals. All these nefarious activities of greedy money lenders and unscrupulous merchants can be eliminated if the tribals are made literate or enlightened.

With regard to the syllabi in tribal areas in the non-formal education, lessons on tribal heroes, their prominent mythologies, folk tales, festivals and dances should be suitably included so as to make them proud of their cultural heritage. Scientific knowledge with regard to flora and fauna of forests, their preservation and proper utilisation, should from an integral part of the learning system. The curriculum for non-formal or formal schools situated in tribal areas should be formulated in such a way that it can strengthen the bonds of tribal moorings in the impressionable age and to develop scientific attitude in them. The learning materials should be specifically tailored to create and sustain the interest of tribal children in modern education. Suitable "Science based" and "Culture based" curriculum has to be evolved specifically for non-formal education centres situated in tribal areas.

These centres of learning must liberate the tribals from the mesh of irrational taboos and illogical superstitions. For example most of the tribal groups do not start any kind of agricultural operations without sacrificing animals or birds. Tribals invariably think that cause of death or ill health is due to some evil spirit or magic done by their own enemy. This kind of supersittionp beliefs generally further complicate their social behaviour. The contents of the course should aim at dispelling these blind faiths and age old customs which are detrimental to their prosperity and progress.

The syllabi should also be woven around their immediate problems. The tribals have to be guided to find out the causes of low productivity of their fields as well as cattle. As the tribals have been following primitive methods of cultivation the yield from their fields is very low and their cultivation practices are un-economical. Similarily each tribal family possesses good number of cows, but they seldom milch the cattle. Lesson on improved practices of cultivation and cattle management have to be included in the syllabi devised for non-formal education so as to enable the tribal farmers to improve their economic conditions. In view of distinct cultural background of different tribal groups of Andhra Pradesh the same syllabi and methods cannot be uniformally adopted. The techniques of teaching and contents of the course may vary from tribe to tribe and sometimes from region to region.

Need for Revitalisation

The traditional institutions and age-old tribal dances and art forms can be utilised fruitfully as effective channels of communication of skills and knowledge. Dormitaries for young girls are available in some parts of the tribal areas of Visakhapatnam district.

Girls and boys play the traditional games after the day's labour and participate in tribal dances. They also learn about their traditional occupations and cultural ethos. They can be revitalised to impart moral and cultural values through tribal games and dances.

With regard to the medium of instruction the teachers should learn the local dialect and teach the clientele. Most of the tribals inhabiting the mountainous tracts speak their own dialects. The tribal children who come form a distinct cultural back-ground find themselves in bewilderment when they first enter formal schools with althogether different environment. The teachers generally belong to the plains and are hardly aware of the local dialects and village milieu. Therefore it should be made an essential condition for the teachers posted in these centres to learn the local tribal dialects and their cultural heritage within a certain period. This method of teaching in the local dialect will instil interest in the tribal children and pave the way for harmonious relationship between the teacher and the taught. Such teachers who learn the local dialect may be given attractive incentives by way of increments and free accommodation etc. Educational tours and field trips to centres of progress and development, should be included in the scheme. These visits will certainly enliven the learning process. Regular film shows on developmental activities, health and hygiene, important national events, sports etc. may be arranged so as to create interest in learners.

The talented and enthusiastic children and youth may be indentified and encouraged to pursue higher studies. The non-formal education in tune with local customs, traditions and environment can play a vital role to bridge the wide gap between tribals and non-tribals in their socio-economic conditions.

White Revolution In Karnataka

R. Rajappa Setty*

THE Karnataka Dairy Development Corporation, Ltd. (KDDC) launched about five years ago, with the World Bank Aid of Rs. 24 crore and with an outlay of Rs. 51 crore, is now poised to usher in the white revolution-"Ksheera Kranti" in the eight southern districts of Karnataka The story of the KDDC is a history of strenuous efforts and saga of progress and achievement, creating perceptible impact on the social and economic life of nearly 25 lakh people in South Karnataka. The Corporation is serving small scale milk producers living in eight districts, namely Bangalore, Chikkamagalur, Coorg, Hassan, Kolar, Mandya, Mysore and Tumkur, with a total rural population of about 55 lakh distributed in 8,800 villages. There are about 16,000 high yielding cross-bred cattle in 68 taluks. The KDDC operates through a three-tier structure : Village Milk Producers' Cooperative Societies at the village level, Milk Producers' Cooperative Unions, at union level and the Dairy Development Corporation at the Apex level.

Milk Production and Collection

The essential technical inputs and services are provided by the KDDC to the farmers for increasing the milk yield. A mobile veterinary unit goes round the dairy village once a week to treat the sick animals free of cost. About 781 Dairy Cooperative Societies (DCS) have been covered and 2,99,735 animals treated. To enhance the milk yield, the milk producers are supplied with cattle feed, which is palatable, nutritious and well balanced in all the required nutrients Also it is sold at a reasonable price and made available throughout the year. To convert the project area into disease-free zone, health coverage work of the dairy cattle is entrusted to the Faculty of Veterinary Sciences University of Agricultural Sciences, Hebbal, at a cost of Rs. 1.3 crore. In order to intensify the production of cross bred cattle, special importance is given to the artificial insemination programmes. So far 1,01,237 inseminations have been done to 2,99,725 animals. To enlighten the farmers in better methods of maintaining the cattle they are sent regularly to "Amul" for training. So far 900 farmers have underwent the training

Nutritious green fodder is one of the essential ingredients to boost the milk production. So fodder development projects have been initiated in collaboration with the University of Agricultural Sciences and about 1200 plots over an area of about 545 hectares raised To impart training to the members of the programme two training centres one each at Bangalore and Mysore have been set up and about 760 persons are trained in various activities of dairying.

Progress in figures

The progress chart of the Corporation has shown an un-interrupted march towards the fulfilment of all its targets. The number of Dairy Cooperative Societies functioning in a project area during 1975 was only

*Consultant (Mass Media): The Karnataka Dairy Development Corporation Ltd., Bangalore.

47. Today the strength is 870 involving about 2,700 villages of 18 lakh population. The total membership is about 1,27,300. Out of this, the small farmers constituted 49,320, marginal farmers 34,169, landless labourers 13,337 and others 30,959. There are about 7,085 scheduled caste and 4,926 scheduled tribe members. The milk procurement from the societies in 1975 was only 258 tonnes and 52,000 kg. per day. Today it is about 1,33,500 tonnes per annum and 1,24,933 kg per day. Milk is collected with the help of a fleet of more than 100 dairy trucks and milk tankers in 67 milk routes touching every key point and covering a distance of about 4.8 lakh km per month.

As a result a farmer, who was getting nearly Rs 1.20 per seer for his milk from milk vendor now receives Rs. 1.60 per litre from the dairy corporation societies. Each member of the DCS nets an income ranging from Rs. 150 to Rs. 1,000 per month. The Tibetans of "Little Tibet of Karnataka" in Kailasapura village have galvanised their strength to make the village a centre of milk collection. The society, with a membership of 100 Tibetans has kindled a ray of hope in their hearts.

On account of the prosperity and credit-worthiness of the members of the society, the commercial banks are attracted and many new branches have been opened in the villages of the milk procurement areas. Further on account of the activities of the milk project, many hill and nomadic tribes like Lambani have started a new life. The Lambanis are now leading a settled life in Kolipalya, Veerenpura and Mukaupalya villages, under the milk production cooperatives scheme.

The project has thus been playing an important role in improving the economy of the small and marginal farmers by properly integrating agriculture and livestock enterprise. Under the scheme, farmers are assured of better economic returns for the milk produced by them. Also nutritious milk is made available in adequate quantity to the people of Bangalore and Mysore, Tumkur, Hassan and also some urban towns

This is the story of the KDDC, which has contributed to the Nation's challenging task of achieving White Revolution-"Kshera Kranthi" ensuring a pride of place to Karnataka on the milk map of India. □

White Revolution

'THE white revolution the largest milk project in the world, is bringing daily cash income to some of the poorest and the most depressed people of rural India. The project will also ensure milk supply to all towns and cities with over one lakh people' " writes Dr. Barnes, a British author in his book "Two hundred Million Hungry Children", released recently.

Dr. Barnes says already over 10 lakh people are in the producer co-operatives supplying milk, and by 1985 this will go upto 100 lakh.

The Handloom Industry of Sualkuchi

P. K. Bandyopadhyay*

SUALKUCHI, popularly known as the Manchester of Assam, is situated in an idyllic setting on the bank of the Brahmaputra. The village, flanked by hill on the east and the west, is the centre of weaving activities. The weaving tradition of the village goes back to several centuries and the artisans carry on their hereditary profession with zeal and dedication. As one enters the village, one invariably hears the rhythmic sound of the shuttles, which cascades like music from the weavers' homes

The history of the weaving industry in Sualkuchi and Assam is quite old. The migration of several streams of Tibeto Burman people at different periods gave a fillip to the local industry. The weaving of cloth was a household industry in early stages. The object was to meet the domestic requirements—cotton cloth for ordinary use and 'spun' silk for use on special occasions, like marriages and festivals. Weaving on a commercial scale was a later development.

It was perhaps with the weaving of Garo 'bhumi' (a special cloth used during marriages among the Garo tribe) that the first phase of the commercial weaving was initiated at Sualkuchi The second phase set off when the artisans started weaving of 'Jainsem' and other cloth for the Khasis The Ahom Kings extended their patronage to the weaving industry. Even during the British period, the weavers stuck to their ancient profession with the same devotion, despite taxation and other disincentives on 'muga' silk production.

Innovations

However, the technology remained primitive till 1939—the year which marked a watershed in the history of the Sualkuchi handloom industry. Kaliram Karikar, a weaver of repute, introduced some innovation on the advice of the then Superintendent of the Gauhati Weaving School. He replaced the country looms with fly shuttles and brought the J'acauard machines With the rise in the cloth price during the second world war, some artisans found weaving a goldmine. And motivated by higher profits, they converted the household profession into a regular industry and designed new patterns to make the products more attractive.

A large chunk of the population of Sualkuchi is directly or indirectly connected with the weaving industry. The total population is around 15,000. Of this there are 1,928 weaver families, the artisans number 5,226 In all, there are 3,326 shuttles—3,184 fly

*Regional Officer, (North-East) Field Publicity Shillong.

shuttles and 142 throw shuttles. About 75 per cent of the looms are used for production of jute and muga cloth. The annual production is 22 lakh metres of jute cloth and about I lakh metres of muga cloth.

The Assam Government has decided to develop the handloom industry in the cooperative sector. The cooperative movement in Sualkuchi, however, has not yet gained the requisite momentum. So far, only 12 cooperative societies have been set up. There are 1,588 weaver cooperatives in the state, involving 54,000 looms. About 500 societies are doing well. The remaining societies are in a moribund condition.

Sole vocation

There are 6.94 lakh of looms of different classes in Assam, which are producing fabrics of various designs and quality The total number of weavers engaged on the looms is about 7.84 lakh. About 10 per cent of them take to handloom industry as their sole vocation and produce fabrics on a commercial scale. About 73 per cent of the looms are of fly shuttle type. The consumption of yarn by the industry in the state is indicated in Table 1.

Table 1

Consumption of Yarn

Type	Lakh
Jute	0.47
Muga	0.80
Eri	1.80
Cotton	72.64

For this purpose the Assam Apex Weavers and Artisans Cooperative Federation Ltd. (ARTFED), an apex body for the cooperatives, was set up in 1977. It was not a new organisation as such. The erstwhile Assam Apex Weavers Cooperative Society Ltd., was restructured and given a new shape and look through the ARTFED.

The objectives of the ARTFED are several. The first is to bring at least 60 per cent of the genuine weavers within the cooperative fold and revitalising the existing structure. Second to ensure supply of the raw materials, like yarn and other accessories. Third, to ensure marketing of the fabrics. And finally, to create employment opportunities for the skilled workers.

The ARTFED provides financial assistance under the central sector schemes of the National Cooperative Development Cooperation and the Reserve Bank of India. Under the R.B.I. scheme, the financial assistance would be provided initially to 50 primary weaving societies for procurement of yarn and boosting of production. It would be extended to 300 societies in a phased manner. The assistance would be at the rate of Rs. 1,500 for a cotton loom and Rs. 2,000 for a silk loom.

The ARTFED has chalked out a five year scheme for revitalisation and development of the handloom cooperatives. Table 2 details the yearwise break-up of the plan.

Table 2

Development of Handloom Cooperatives

Item of assistance	*1979-80*	*1980-81*	*1981-82*	*1982-83*	*1983-84*
Revitalisation of primary weaving societies	100	100	100	100	100
Strengthening share capital of the primary societies Rs. 20,000 each	20	20	20	20	20
Construction of workshed of primary societies for assembly type production	100	100	100	100	100
Financial involvement for building of worksheds Rs. 50,000 each	50	50	50	50	50
Looms and accessories Rs. 10,000	10	10	10	10	10

A substantial quantity of yarn is brought from other states. There are only two yarn mills in Assam, one at Chandrapur and the other at Jagi Road. The total annual production of the mills is about 26.58 lakh. Three intensive development projects and two export production projects have been taken up under the handloom development programme in the state

Employment Scope

The handloom industry in Assam has an immense scope for growth and generation of employment The State Government has already initiated steps for its revitalisation and development. These include the scheme to bring the industry within the cooperative fold.

On the recommendation of the State Committee on Cooperation the ARTFED has also planned a programme for intensive training for the weavers of the primary societies. Despite the Plan and the financial allocation, the success of the cooperatives, and the development of the handloom industry in the state, largely depend on the formation of viable and genuine cooperatives.

The President of the Weaving Association of Sualkuchi has pleaded for the formulation of the broad-based cooperatives. Also, the association having 911 members, had urged the State Government to take immediate action to modernise the existing looms and put the industry on a sound footing, thereby breaking the stranglehold of the moneylanders. ☐

Farmers, Pass Book System

Noorbasha Abdul*

IN India the agricultural credit need is expected to rise from Rs. 1537 crore in 1973-74 to Rs. 9400 crore by 1985. Presently, the farmers are given loans after verifying their land records, and obtaining a number of other documents. To simplify the procedure, issuing of "Agricultural Pass Book" was recommended by the 'Committee on Agricultural Procedures' appointed by the Government of Andhra Pradesh in 1965. Even today after fifteen long years, the Pass Book System is not yet completely introduced throughout the State. Out of 60 lakh pass books actually required, the State has so far distributed only 27 lakh.

Pass bok is the means to avoid or control the multiple financing to farmers. Suppose a farmer takes loan from his relative or any money lender. This transaction is not recorded in the pass book and the same farmer raises another loan from any credit institution showing 'no dues' in the pass book. Then the aim of pass book is defeated. The pass book does not speak of the transaction which had taken place before the same is issued. The pass book is issued by the village authorities only. So malpractices have become common in the proparation of these books. Then the banks do not consider the pass books as authentic and reliable. So they insist on land extracts before sanctioning agricultural loans. The very purpose of issuing the pass-book is defeated. Lack of legislative backing renders the pass book useless. The working group on multi-agency approach in Agricultural Financing to the pass book system in Gujarat, states "though the system was introduced in 1960, the pass books fell into disuse and treated as a record of information to the farmer only but not to be relied on by the banks as authentic". In most of the areas, like Telangana in Andhra Pradesh where the pass books have been distributed, the buying and selling transactions of land are carried out with the help of the village Patwari but not registered with the Sub-registrar's Office, because of the non-availability of title documents the inability to meet the registration expenditure. A transaction recorded on a white paper cannot be accepted as authentic by the banks to sanction loans to the farmers. Joint pattadars and tenants cannot enjoy and benifit from this system. Because the entitlement of each one of the joint pattadars cannot be distinguished and hence cannot enjoy one's due share in the total loan. The landlord holds the pass book and gets finance whereas the tenants, the real tiller remain unfinanced. The Evaluation and Applied Research Department of the Government of Tamil Nadu pointed out that the pass books are (a) not issued on a continuous basis, as a result new pattas are not covered, (b) total extent under joint-holding is recorded in the pass book of each joint pattadar and not the entitlement of each shareholder and (c) several persons who ceased to be pattadars long back had been issued books. Books were also found to have been issued in the names of deceased persons.

Solutions

To render the pass book system foolproof, the following suggestions may be adopted :

To begin with, all the land records should be updated and the actual extent of land in the possession of a landlord/tenent should be identified. All the farmers in a particular region should be issued pass books at a time. Total assets and liabilities of a particular farmer should be correctly recorded with the help of Karnam's "ADANGAL", land revenue records, lead bankers, etc. The buying and selling of land should be effected without entering the transactions in the pass books of the two parties. All lending institutions, as a rule, should utilise the pass books as the source of borrower's information and record the transaction. Revenue Authorities should also record in the pass books the amounts of taccavi loans issued to the farmer and land revenue due to the Government.

A separate machinery department should be set up, to handle all the problems involved in the administration of the system, to maintain duplicate pass books and to record all transactions like buying and selling of land as and when they occur. The Registering Authority or the lending institutions, should inform the department about the details of the transaction.

*Commerce Lecturer Nagarjuna University Nagarjuna Nagar

Crop Insurance

Dr. M. N. Mishra*

FLOODS and drought play havoc with the standing crops every year. Till such time permament measures are executed to save the crops from the vagaries of the nature, crop insurance scheme comes to the rescue of our farmers. Crop insurance in India was started on an experimental basis in 1974 by the General Insurance Corporation of India (GIC). But the progress of the scheme has been unsatisfactory as the amount of claims was more than the premia realised.

In 1974, claims totalled Rs. 25,18,023 against the total amount of premia Rs. 2,96,509. The gross direct premium in crop insurance business during the year 1975 was merely Rs. 90,337. The business declined on account of loss suffered by the GIC. Inspite of the losses there is need of crop insurance. The Indian School of Political Economy, Linavala examined the issue and submitted its report. A pilot crop insurance scheme, based on homogeneous area approach, suitable

Freelance Journalist

for implementation on a large scale and on a viable basis is still under the consideration of the Government.

Suggestions

The Government and the insurance company should not be afraid of the losses. The huge amount of expenditure involved in giving relief to the flood-affected and drought-hit people, can be better utilised to make good the losses suffered by the insurer on account of, say the branches opened in rural areas. The insurance potentialities of the rural areas have not been tapped properly.

The Government should help the GIC to promote insurance and by insuring a large number of farmers so that the share of loss per person is minimised.

As the crop-insurance scheme is in the initial and experimental stage, the terms and conditions may be fluctuating. The State Government may act as reinsurer. The job of underwriting crops insurance should be entrusted to the local agents and inspectors who are familiar with the activities. Unemployed youth of the local areas may be used for selling crop policies like Lead Bank scheme, the GIC can also adopt a district for which its subsidiaries should be given wide part and jurisdiction The GIC should treat a crop Insurance. Fund from its profits. The profit transferred to balance sheet was Rs 62,410 in 1973 which increased to Rs. 5,98,57,318 in 1977 If atleast 1 per cent of the profit is transferred to the Crop Insurance fund, about Rs 5 lakh could have been assigned to the Fund every year This Fund as well as reinsurance scheme with the respective government can easily meet the loss occurred in issuing crop policies

The teething trouble can be overcome if the government and GIC sincerely formulate effective schemes for crop insurance. Different reports of the Expert Committee should be processed expeditously and the Union and State Governments should formulate an effective scheme. The problems of moral hazards can be minimised by entrusting certain liabilities upon the insured. The loss which does not exceed 5 per cent of the policy amount should not be made good. The policy amount may be decided according to the average yield per annum calculated or on the basis of the yield during the preceding five years The cost of sowing, irrigation, supervision, harvesting, threshing, transportation, marketing and 20 per cent of the costs for profit may also be added to determine the policy amount. The insured may be paid to the extent of 80 per cent of the loss. A partial settlement be made after evaluating the saleable crop. If the harvested crop is stored to be sold at later period when the market price will increase, the insured may be benefited by the enhanced price. But the postponement of the payment till the sale of the produce may create a great hardship to the insured. Therefore, it would be better to settle the claim when the crop is finally harvested and ready for sale.

The premium may be calculated on the basis of the policy amount, possibilities of risk, seasons, geographical and social conditions, economic-status of the insured, nature of the crop, period of harvesting and so on and revised from time to time so that the insurer does not suffer any loss. □

A Shift in Area of Pulses in Andhra Pradesh

C. Srinivasulu*

PULSES are known to be an important and the cheapest source of protein for the masses of people in India. They have occupied an important place alongwith other items of food. In fact they contain as much as 20 to 30 per cent proteins, which are considered to be high when compared to cereals and other food items like eggs, fishes etc Apart from containing Vitamins-B pulses also have minerals like calcium and iron, whose importance is better known than discussed. For human beings, a daily requirement of 30—40 grams for children and 60—70 grams of pulses for adults is essential. Pulses are also necessary in live-stock feeding. Crop of the pulses add many times more nitrogen to the soil per year than chemical fertilizers. But in India per capita availability of pulses has declined from 60 grams per day during 1951 to 40 grams in 1977-78 During 1950-51, the prduction of pulses in India was 8.41 million tonnes, whereas in 1977-78 it was only 11.80 tonnes While demand for pulses, during this period has almost doubled, the production has failed to keep pace with it. According to one estimate the demand for pulses is projected to be 30 million tonnes by 2000 AD. It means that in the next 20 years, 20 million tonnes of additional pulses should be produced.

The population of Andhra Pradesh is nearly 50 million and the production of pulses in the State in 1977-78 was only 3.32 lakh tonnes. So, the per capita availability of pulses in Andhra Pradesh was only 20 grams per day which is lower than the average per capita consumption of the country.

In Andhra Pradesh the area under cultivation of pulses, in 1968-69 was 14,89,494 hectares and in 1977-78, it was only 13,02,265 hectares. From 1968-69 to 1971-72 the trend was declining, but after that the area of pulses increased. Again after three years i.e, in 1976-77 the area of pulses was drastically decreased to 13,00,178, hectares. And last year, it was 13,02,265 hectares.

While the production of Pulses was 2,75,113 tonnes in 1968-69, it fell down to 2,58,897 tonnes in 1969-70. In the succeeding year 1970-71, the production of pulses increased to 4,49,519 tonnes, which was the highest production of the decade understudy. The area under pulses cultivation decreased from

*Lecturer in Economics, Sri Venkateshwar College, Suryapet, A.P.

14,71,239 hectares in 1969-70 to 14,50,867 hectares in 1970-71. In 1971-72 and 72-73 the production decreased. Again from 1973-74 to 1975-76 the production increased in the same period with a slight improvement in the area of pulses.

As far as the production of various types of pulses is concerned, the production of pulses increased in all varieties except red-gram. Surprisingly, the area of red-gram increased from 1,75, 599 hectares to 1,99,160 hectares in the decade of study, but the production decreased from 84,859 tonnes to 29,869 tonnes.

Average yield per hectare of Pulses in Andhra Pradesh

(in Kgs.)

Year	Average yield per hectare	Year	Average yeild per hectare
1968-69 . .	185	1973-74	281
1969-70 . .	176	1974-75	291
1970-71 . .	301	1975-76	291
1971-72 . .	283	1976-77	271
1972-73 . .	223	1977-78	255

SOURCE: Seasons and Crops Reports—1968-69 to 1977-78, Director of Statistics Government of Andhra Pradesh

In case of average productivity the same trend continues as per the Table. In 1968-69 it was 185 kgs and in 1977-78 it was 235 kgs. The highest average productivity was only 310 kgs which was contributed in the year 1970-71.

The rate of growth of area and production of pulses was quite dissatisfactory.

From 1968-69 to 72-73 the rate of growth of area of Total pulses was 9.7% and rate of growth of production was 8.9%. Whereas in 1973-74 to 77-78 the area growth rate was 7.4% and the production rate was 1.6%. But all over the decade, the rate of growth of area was —12.7% and the production +2.9% only.

This study reveals that the area which was hitherto allotted for the cultivation of pulses is now shifed to other crops. Though there is an overall increase in production of pulses, in the State, it is negligible, when compared to the large scale production of cereals in these areas.

This poor performance in the production of pulses in Adhara Pradesh State may be attibuted to several reasons.

With the increase in irrigation facilities like canals and digging of new wells, farmers shifted their lands to commercial crops and cereals, which assured more productivity per acre. Drought prevailing in the State is another root cause for the decline in the acreage of pulses.

Instability in rainfall, not only affects the cultivable area, but also the productivity. The estimated rainfall decreased in 1971-72, it was 692 mm and in 1972-73, 727 mm (the normal rainfall in the State is 893 mm). We can find in both the years 71-72 and 72-73 the land under pulses also decreased. Surprisingly the production was less in that period compared to the subsequent years. As the above explanation shows the area of pulses depends more or less on rainfall.

The farmers attitude is quite pessimitic. They shift their croping pattern of pulses alongwith rainfall, but they do not like to supply water to his crop even once or twice. Another cause for the decline in the production is the conservative attitude among farmers towards the use of fertilizers and pesticides, which help to boost up the productinn. The pulses crop is prone to disease and to frequent attacks by insects and pests, which leads to low productivity.

Surprisingly, some field experience suggests that most of the farmers are still unware of the variable high yielding variety seeds (HYVS). Unfortunately, the HYVS in pulses were not giving any encouragement or inducement to the farmers all over the State. Inspite of this number HYVS of pulses in State (HY 2, 3, 4 and a 16 PDC 71-7, PDP 71-2 L-G, Jyoti, PM-1 etc.) have been released. They are capable of yielding 15 to 20 per cent more than the traditional varieties. The available HYVS are not able to compete with HYVS of most cereals and commercial crops such as Rice, Maize, Bajra, Jowar and Ground Nut. Pulses HYV needs yield hardly 8-10 quintals but cereals yield more than 40-50 quintals per hectare. Moreover, the supply of HYVS of pulses is not satisfactory in the State. Alongwith the production techniques of pulses the farm level are traditional. And another important reason for decline in acreage of pulses is the negligence in research and experiment, which can boost up the net output.

Farmers should be educated and trained to adopt suitable farm management techniques. which can boost up the production. Through news-papers, pamphlets, radio and T.V. farmers must be educated about the importance of benefits of HYVS of pulses.

The use of quality seeds, benefits of useful fertilizers and plant protection should be demonstrated.

An increase in production of pulses in essential, not only from commercial point of view, but also from the nutritional point. Therefore, an intense effort to encourage farmers to make substantial investment in the production of the pulses, is the need of the hour.□

Village Reconstruction in Orissa

KADAGADA, an interior backward village in the district of Keonjhar, Orissa has been adjudged Savings Village. The credit goes to the members of Gangapati Yuvak Sangha of the village, who are a bunch of dedicated youngmen engaged in the village reconstruction work. They took up the Savings Village Scheme. They persuaded the villagers to open Pass Book Accounts in the post office. All the families of the village numbering one hundred and fifty joined this scheme and deposited Rs. 32,000/- under postal savings accounts. It soon caught the attention of the Government Officers in charge of executing different developmental schemes in the district. They visited the village and asked the villagers for taking up certain self employment schemes with easy loan assistance.

—FPO, Keonjhar

BOOKS

India—1979

India—a Reference Annual, 1979 by Research and Reference Division, Ministry of Information & Broadcasting, Government of India, New Delhi, pages 560, price Rs. 26.

THIS is the SILVER JUBILEE edition of the Reference Annual containing information on diverse aspects of our national life and activities.

The publication describes the machinery of the Government and other institutions and gives a clear picture of the progress made in various spheres of the national life and activities, such as social services, like education, health, social welfare; and other activities like transport and communication, science and technology, rural reconstruction, industry, commerce, agriculture, power generation and so on.

The book under review though is an annual publication, includes this time two additional information sources. There is an additional chapter which gives detailed insight about the justice and law in the country, the highlights of which are the source of law; judiciary and its functions in safeguarding the citizens' rights and liberties; reform in criminal law, the role of legal profession and law commission; adoption and succession of major communities, personal laws to marriage and laws of Parliament. This is an interesting and useful information for all of us.

Another 'feather in the cap' is the information regarding tourism and centres of tourist interest in the country alongwith three maps showing the main rail links, national highways and air links.

The study of the publication should open the eyes of our national leaders who are busy in the national development. The health statistics show that malaria is coming again with a thud, as the positive incidence of the disease increased from 1.48 lakhs in 1966 to 64.7 lakhs in 1976 (page 98). Nutrition information suggests that the nation may be heading towards a biological decay in the near future as many of our children and the lactating mothers are under-nourished. Government should take stern action against the food adulterators who are asource for this nutritive deficiency. Conditions of the rural water supply are shocking, in some of the villages people have to travel three to four kilometers to fetch drinking water for the family. Literacy, though increased, is still far away from the desirable point.

The book is a rich source material for research workers, academicians, professionals, officials, students and journalists alike. It is a MUST for every desk and every home.

B. R. Kharbanda

Changing Food Habits

Changing Dietary Patterns and Habits : L. P. Vidyarthi, R. K. Prasad and V. S. Upadhyaya : Concept Publishing Company, New Delhi, 1979. Pages 191, Price Rs. 60.

THE book studies in depth the food habits of four regions in Bihar. It also pleads for the revival of certain discarded recipes of old for their nutritive values. Particularly interesting is the study as it reveals the preference of people for non-vegetarian foods and how caste traditions and religious bias also influence and determine food habits.

Social acceptance of certain types of food is also important. Packaged food which is the general pattern of food in modern western countries has not yet become acceptable on a large scale in these areas. But this is likely to change with modern society accepting food like biscuits, tinned milk etc. Cooking food may soon be given up in homes because of the labour, inconvenience involved and also due to considerations of space for making kitchen and scullery.

The study is important as it lay down the basis for a detailed examination of the fast-changing social habits of people. It may be interesting to trace the change in food habits from the sociological point of view.

E. P. Radhakrishnan

Ensuring the Security of India

The Defence of India : By Raju G.C. Thomas; The Macmillan Company of India Limited; pp. 245; Rs. 55.

This erudite study of India's defence problems seeks to present a perspective of strategy and politics with other factors which in various ways determine their budgetary allocations. The author has attempted in these pages an analysis of the problems of ensuring the security of a country of India's dimensions with sprawling land and sea frontiers beset with some baffling geo-political challenges. As Dr. Thomas himself points out it is essentially a revised version of his doctoral dissertation.

In discussing the dimensions of Indian defence spending the author chooses the 1963-72 decade as representing a crucial and decisive period for the subcontinent. A set-back in the Sino-India war of 1962 and later the successful operations in Bangladesh within a span of the next ten years are set as two land-marks at either end in the military history of independent India. The debacle of ill-prepared response to Chinese aggression had revealed all the chinks in India's defence. The years that followed witnessed a painstaking and thorough build-up of the sinews of defence taking the country to the next stage of culmination of a decade of defence planning. Dr. Thomas takes the reader through the processes of this progress towards the goals of self-reliance and self-sufficiency. He examines the main constraints of defence spending which obviously has to reckon with the needs of economic development claiming more urgent and greater attention. The competition among the services inter-se for a larger slice of the budgetary cake is itself an interesting study of the "politics" of distribution. All these are dovetailed into the perspectives of external threats, the updating of technology and the need to broadbase. The defence infrastructure in the context of changing compulsions. Defence study has been acquiring increasing significance over the years. A treatise of this kind needs periodic revision to be of help to those engaged in analysis of military strength and strategies.

M. K. Dharma Raja

Industrial Potential of Agra District

Economics of Small Scale Industries : by S. P. Mathur, Sundeep Prakashan, Delhi (1979), Pages 277, Price Rs. 80.

THIS small volume emobdies not only the detailed research, but also the intensive survey and field work that author has undertaken to investigate the industrial potential of Agra District with regard to small scale industries.

The book is extremely useful to all those entrepreneurs, who have inclination to set up industries in Agra region, which has tremendous potential for further expansion and growth as an industrial complex. The policy makers, particularly the District Industrial Centres in U.P. will find it a useful guide in dealing with various problems they face.

K. Prasad

Imbalances In U.P. Development

Studies on Development of Uttar Pradesh : by T. S Papola, and others; Giri Institute of Development Studies, Lucknow, pp. 282, Price Rs. 75.

DESPITE three decades of planning, major part of our population continues to live below the poverty line, and close on 50 million people are unemployed. Even among those employed on agriculture, the employment intensity is just about 33 per cent. Our Green Revolution has turned out to be pale green. Why ? What about all the tax and other concessions and incentives given to industry and all the talk of uplifting the backward regions ?

The authors T. S. Papola, V. N. Misra, H. S. Verma, R. C. Sinha and A. Joshi on the staff of the Giri Institute have made brilliant studies of anatomy of agricultural growth, agricultural and rural employment, structure of manufacturing industries, rural industrialisation, spatial diversification of manufacturing industries and some aspects of entrepreneurship.

The studies show that the comparatively affluent western districts have achieved the highest rate of growth both in agriculture and industry. The eastern districts come next in agriculture and central districts in industrialisation. The Bundelkhand and hill districts continue to suffer the age-old backwardness.

Agriculture recorded growth during 1950-71 through increases in cultivable area, areas of double cropping and yield and cropping pattern. The tempo of increase, however, declined after 1971. The increase in agricultural growth, however, increased disparities of agricultural development among regions.

Industry did grow in UP, but the study shows that it was found that more than half of the factories registered were only on paper, small industries also developed. The 'cluster approach' is in operation and it is the only practical approach.

There is a wealth of information in scores of tables included in the volume. Each essay is followed by a detailed reference section to facilitite more detailed studies.

B. S. Jain

Behavioural Pattern of Women Students

Women Students in India—Status and Pesonality : by Savitri Sharma, Concept Publishing Company, New Delhi, Pages 171, Price Rs. 50.

DR. Savitri Sharma has tried to find out operational solutions of social maladies based on good grounding in research methodology, extensive comprehension of the social dynamics and her resourcefulness in canvassing meaningful questionnaire. The study is related to Bihar, taking her population from the Magadh Mahila College, Patna.

Taking into account such indices as income, occupation, education and the like, Dr. Savitri Sharma proceeds to explain the impact of parental influence and the social set-up in terms of life-styles, belief system, social and moral values, attitudes on child growth and development of the personality as well. Basing her studies on the Guilord-Zimmerman Temperament Survey (GZTS) and Allport-Vernon-Lidzey Scale (AVLS) of values, she has evolved a system of her own on the basis of which various groups of students have been evaluated. Her study has been analysed in detail on the basis of a sample of 343 complete sets of data out of which 300 data have been carefully processed on well confirmed statistical methods.

On the basis of such an analysis, Mrs. Sharma has arrived at certain conclusions which are given in the last chapter. The main conclusions of her survey indicate that the higher classes students had higher scores on various indicators of intelligence and sociability. According to her the relationship between social class and intelligence is statistically positive and the individuals belonging to higher social class possess more abilities than those belonging to the lower class. Even with regard to sociability, the higher social class has an edge over the lower ones ; they encounter less conflicts and have better opportunity for social contacts. There is positive relationship existing between general activity and social status which implies that the higher the status, the more the individual has a liking for speed, is full of vitality, and is productive and efficient. The lower class person, in contrast, is slow and deliberate, easily fatigued and inefficient. The upper class individuals have more leadership ability, are emotionally stable and tend to possess reflectiveness, power for observing of self and others, mental poise, etc. The lower class individuals are critical towards others and also develop a fault finding attitude. According to Dr. Savitri Sharma, though the correlation between social class and masculinity has not been statistically significant, yet it shows that the lower class have developed masculine interests such as being easily disgusted, hardboiled, inhibited in emotional expressions, while the upper class females have developed feminine characteristics having interest in feminine activities, clothes and styles. These and such other conclusions arrived at by Dr. (Mrs.) Savitri Sharma may appear as some of the obvious traits of digerent classes but her main contribution lies in highlighting them and measuring them, though to a greatly restricted extent on a quantitative scale. Considering the treatment of the subject, one feels that this publication can at best, in the long run, be only of historical importance.

Ganga Madhava Rao

Export Orders For HEC

THE Heavy Engineering Corporation (HEC), Ranchi, has secured export orders valued at Rs. 42 crore.

The HEC is to supply 24,800 tonnes of equipment to various countries.

Fifty slag ladles, of Rs. 1 crore 2 lakh will be supplied to the Egyptian Iron and Steel Company. Each ladle weighs about 23 tonnes. The supply will be completed by the end of 1980.

The HEC will modernise the Chhatak cement factory in Bangladesh at a cost of Rs. 3.4 crore. This is the largest industrial contract awarded by Bangladesh to any Indian organisation. In this project the HEC will supply equipment for erection and commissioning. The Industrial Development Bank of India (IDBI) will loan the cost of equipment to HEC. The equipment includes a rotary kiln and cooler, 124 metres long and 3 metres in diameter, with a capacity of 250-300 tonnes per day, and other auxiliaries.

The HEC has also manufactured a transfer car for the Bhilai Steel Plant. The car has a carrying capacity of 300 tonnes. It will help in carrying and shifting of 3,600 mm plate mill housings, each weighing 280 tonnes.

Profit For HMT

HINDUSTAN Machine Tools has earned a profit (before taxes) of Rs. 21 crore on sales valued at Rs. 184.56 crores during 1979-80.

The profit on sales was 11 per cent as compared with eight per cent last year. The improvement was made possible owing to higher production, sales and better management of resources.

H.M.T.'s production in 1979-80 registered a growth of 10 per cent from Rs. 165 87 crore in 1977-78 to Rs. 182.66 crore in 1979-80. The undertaking's gross profit (before interest and taxes) represented a return of 20 per cent on capital employed.

Copper, Zinc And Lead In 4 States

VAST reserves of metals like copper, zinc, and lead have been discovered in Maharashtra, Tamil Nadu, Karnataka and West Bengal. The discovery has been made by the Geological Survey of India during 1978-79.

In the Tambekhani-Kolari-Bhaonri area, Nagpur district, Maharashtra, exploratory drilling carried out so far has established Zinc mineralisation over 1 km strike length.

In the Thanewasna area Chandrapur district also in Maharashtra, a reserve of 50 lakh tonnes of copper ore has been estabished.

The investigtion of the multimeter deposit of Mamandur, South Arcot district, Tamil Nadu, has yielded 6 lakh tonnes of lead, zinc copper, cadmium, and silver over a strike length of 300 m.

In the Aladahali Area, Karnataka, 17 lakh tonnes of copper ore of 1 per cent copper grade have been estimated down to a depth of 150 m.

In the Gorubathan prospect, Darjeeling district, West Bengal, a reserve of about 25 lakh tonnes of ore with zinc, lead and minor amount of silver, cadmium antimony and copper has been estimated. Recoverable magnetite is also associated with this reserve of base metals.

ICAR Awards

FIVE agricultural scientists from different disciplines have been selected by the Indian Council of Agricultural Research (ICAR) for the Jawaharlal Nehru Award for outstanding post-graduate research work in 1979-80.

They are Dr. Baljit Singh and Dr. Manjit Mahal, both of Punjab Agricultural University, Ludhiana, Dr. P. Sen of Central Rice Research Institute, Cuttack, Dr. Hari Shankar of Indian Veterinary Research Institute, Izatnagar, and Dr. K. P. Joy, a fisheries scientist

These scientists will be given a cash award of Rs 5,000 each and a citation.

Record Progress By SBI

THE State Bank of India achieved a record growth of Rs. 436 crore in its advance to the priority sectors during 1979. The total of such advances constituted Rs. 1,885 crore. Such advances improved to 46.4 per cent of total advances by the end of last year. The bank was therefore, not far from the goal of 40 per cent required to be reached by public sector banks in the next five years.

The SBI has produced gratifying results for 1979. Deposits had increased by 23.8 per cent or by Rs 1,440 crore, compared with 13.9 per cent for the entire banking system.

STEP

BY

STEP

Profit For SAIL

THE Steel Authority of India Limited (SAIL) has gained a net profit of Rs. 20 crore in the year 1979-80.

Saleable steel production of all SAIL plants together in 1979-80 was 4,592 million tonnes. The output of saleable pig iron was 0.972 million tonnes.

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OUR
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STEP BY STEP

Artificial Insemination At Villagers' Door Step

THE Punjab Agriculture University has brought the artificial insemination technique to the farmer's doorsteps This has been done through a "frozen semen container" gifted to Subedar Jagat Singh, a progressive farmer of village Chimna in Ludhiana district. He has conducted through this equipment around 300 inseminations—using semen extracted from bulls of high pedigree—in a month

The Punjab Agriculture University plans to distribute more such containers to the farmers interested in improving the animal breed The PAU intends to cover 5,000 villages by 1986

Child Welfare Schemes Praised

INDIAN efforts of uplifting children's conditions like the 200 integrated child (health education and nutrition) development schemes underway were appreciated by Mr James P Grant, UNICEF Executive Director.

Mr Grant indicated that the United Nations Children's Emergency Fund would double the level of assistance to programmes envisaged during 1981-84 Besides supporting ongoing projects, UNICEF would concentrate on area development programmes.

He said the UNICEF would support the massive effort for provision of drinking water supply in villagaes It will assist in the installation of a packaging plant in Madras for oral re-hydration sales, widely required for treating victims of diarrhoeal disease.

During 1981—the year of disabled—major effort would be made to keep the disabled in their home environment In nine out of 10 cases disabled persons staying in their own community remain productive Institutional care of the disabled is expensive

UNICEF was buying about $4 million worth of pharmaceuticals 'nurses' kit containers, textiles and other medical supplies in India for use in this country. Another $8 million worth were being bought for use elsewhere in the region

Much of the $32 million World Bank loan assistance too will be used for purchase in India

Coal Production Looks Up

As a result of measures taken by the Government there has been a step-up in coal production in the country. The monthly average production during the three months period January to March 1980, rose to over 10 million tonnes as against a monthly average of eight million tonnes during the nine months from April to December 1979. The year ended with a production of 104 million tonnes as against nearly 102 million tonnes in the previous year A production target of 113 15 million tonnes has been fixed for 1980.

Public Sector Units Increase Output

SIXTEEN Public Sector Enterprises under the Department of Heavy Industry achieved a total production of Rs. 1178 crores during 1979-80. This was 11 per cent higher than the production achieved in 1978-79, despite severe constraints of power, diesel shortage bottlenecks of transport and difficulties at the ports

Units whose production has exceeded the target set for the year are Bharat Heavy Electricals Ltd Burn-Standard, Bharat Heavy Plate and Vessels and Triveni Structurals Ltd Bharat Brakes and Valve Ltd met their target Hindustan Machine Tools Ltd achieved 95 per cent of the target

More Coaches for the Railways

THE Integral Coach Factory, of Indian Railways, which lagged behind the target upto December 1979, by 20 coaches, has not only made good the shortfall during January—March, 1980 but also marginally improved upon 1979-80 target of 710 by producing 712 coaches During this period, ICF also successfully executed an export order of 50 coaches to Vietnam.

The factory is currently engaged in the challenging task of design and manufacture of the rolling stock for the country's first Tube Rail in Calcutta Two prototype rakes are expected to be ready in 1980-81

ICF is now firmly established as a leading coach builder for export requirements So far, it has supplied about 650 bogies and fully furnished coaches to Burma Taiwan, Thailand, Zambia, Tanzania, Philippines, Uganda and Vietnam

Bank Helps Handicapped

PHYSICALLY handicapped Shri Babu Lal belongs to a scheduled caste family He learnt tailoring from a private tailoring shop at Jawaharnagar, Rajouri. After completing the training, he wanted to start his own tailoring shop but poverty came in his way. He came in touch with Rajouri branch of the State Bank, which provided him finance of Rs 380/-, under innovative banking scheme, for the purchase of a new sewing machine. He purchased two more machines and is earning his livelihood comfortably

FPO ,Rajouri

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Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

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Photographic Officer : P. K. De
Artist : P. K. Sen Gupta
Advt. Manager : T. R. Maheshwari

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Region And The Nation

THE North-Eastern region comprising five States and two Union Territories has always been one of the most beautiful and peaceful regions of our country. Unfortunately, this peace has been to some extent disturbed now. Whatever may be the reasons for this, there are ways of solving problems. They should be solved in a spirit of goodwill and give and take. But the atmosphere sur-charged with mutual distrust and feelings of insecurity can have severe economic and social repercussions. India is one indivisible nation and if one part is hurt, the whole of India feels the pain.

The unity and integrity of the country is of paramount importance to us at this juncture. It is time that the people of the region find a place for themselves in the multi-racial and multi-cultural mainstream of our national life. People who live in one part of the country are equally entitled to live in another. No Indian State is an island unto itself. It cannot chalk out an exclusive future in isolation for itself.

As Deshbandhu C. R. Das said, "Who lives if India dies ?" It is the duty of every peace-loving law-abiding citizen to see that the country's unity and integrity is preserved. Many a disturbance has been caused on frivolous grounds. Rumour-mongering anti-social elements are always behind such disturbances. It is time our brothers in the North-Eastern region do not pay heed to such rumours. Everyone should strive hard for restoring normalcy in the region.

The Centre is doing its best to give fillip to the economic growth of the region. A special cell set up in the Planning Commission will assist a Committee of Ministers to review the development programme of the region.

As already mentioned, the North-Eastern region's interests are the country's interests. But the interests of the nation should no be harmed by narrow regionalism. A srong region can be a strong arm for the mainland, holding the border against outsiders. Let us hope that saner counsels will prevail and a lasting solution serving both the national and regional interests will be found. But the first thing is to stop the agitations and restore peace. ☐

TRENDS

Higher Allocation for Annual Plan

THE Planning Commission has accorded the highest priority in the current annual plan (1980-81) to generation of employment opportunities, particularly in rural areas. A national employment programme covering all job-oriented schemes for rural areas has been envisaged as a regular five year plan project. The Food-for-work programme will be scrutinised closely in the light of evaluation reports The idea was to convert social security programmes into a potential investment of economic progress.

This decision was taken at the second full meeting of the Planning Commission held under the chairmanship of the Prime Minister in New Delhi on May 6.

According to the acting Deputy Chairman of the Commission, Dr. M. S. Swaminathan who, briefed the pressmen the plan size would be a lot higher than the interim budget estimate of Rs. 6572 crore. The annual plan will lay special emphasis on the minimum needs programme including supply of drinking water to rural areas. It has been noted that 190,000 villages in the country have practically no source of potable water supply at present. Over 58,000 villages have been covered by drinking water supply schemes since 1971. While all the villages are proposed to be covered during the Sixth Plan, the Commission decided on an outlay for 1980-81 that would cover 34,000 to 35,000 villages. In making provision for this scheme, the Commission has taken into account the widely varying cost of providing drinking water depending upon the region. For instance, it costs only Rs. 39 to provide water for one individual in Karnataka, but the cost is Rs. 441 in Punjab and Rs. 703 in Arunachal Pradesh.

Irrigation and flood control will get higher outlays and this will include more funds for the Farakka barrage. The Commission has also proposed increased outlays for development programmes for oil seeds, pulses, sugarcane and forestry, infrastructural facilities, like power and transport and vital industries like copper, aluminium, cement and fertilizers.

The provision for science and technology with particular reference to the development of renewable sources of energy, education, social services, family planning, etc. has also been stepped up.

According to Dr. Swaminathan, the Commission has approved an allocation of Rs. 100 crore for economically viable projects for the benefit of the Scheduled Castes and Tribes this year. Both these schemes and the national rural employment project would be part of the five year plan.

As regards the State Plans, excepting for Kerala and West Bengal, these have already been finalised. Plans for the two States are to be finalised soon. On the basis of the official-level discussions, the Commission had arrived at a total outlay of Rs. 6,723 crores for the States' Plans for 1980-81. □

More Assistance To States' Plan Machinery

THE Planning Commission has decided to enlarge its assistance to the States to strengthen their planning and monitoring machinery.

Indicating this in a letter addressed to the Chief Ministers, Governors and their Advisors, Dr. M. S. Swaminathan, acting Deputy Chairman of the Commission, has said that under the decision, special short-term consultancy could be provided to those States which would like to avail of such assistance.

His letter laid special emphasis on the need for faster rural development and optimum use of human resources.

Such selected programmes should be launched as would bring in improved economic and social benefits from the already existing infrastructure and from the past investments made in the public, private and co-operative sectors.

Maximum emphasis would have to be placed on programmes relating to human resources development and generation of opportunities for gainful employment.

Referring to the 20-point programme, Dr. Swaminathan said the major thrust of the plan, namely, providing priority attention to the problems of landless labourers, small and marginal farmers, people belonging to Scheduled Castes and Scheduled Tribes is being incorporated in the Sixth Plan.

Calling for the formulation of rural employment strategies, he said such programmes, to be effective should be location-specific and tailored to suit the needs of each socio-economic, agro-ecological and cultural milieu.

The Commission, he said, proposes to undertake studies on various problems of rural development. These will relate to :

1. Increasing the purchasing power of landless labourers;
2. review of existing programmes for small and marginal farmers and share-croppers;
3. review of existing programmes for rural artisans and the promotion of village and cottage industries through the adoption of appropriate technologies and production-oriented marketing;
4. development of an integrated rural employment strategy bringing together the principles used in the "food-for-work programme" of the Centre and the employment guarantee scheme of Maharashtra, etc;
5. review of the existing special programmes for tribal and hill areas;
6. economic programmes for promoting the welfare of Scheduled Castes;
7. a new deal for self-employed rural and urban poor;
8. special programmes for women;
9. agrarian unrest and land reforms;

10. rural energy supply and promotion of the use of renewable forms of energy and waste recycling; and

11. special problems of neglected areas of the country to accelerate the pace of economic development in such areas.

Dr. Swaminathan also called for the formulation of social security measures for the urban slum dwellers, migrant workers and educated unemployed.

Dr. Swaminathan has said that in the context of the dwindling size of land-holdings, "we will have to introduce a package of services which will enable all farmers irrespective of their innate input mobilising and risk taking capacity to benefit from new technology." □

Advance Plan Assistance To States

ADVANCE Plan assistance to the tune of over 13864 lakh has been released to 16 States during 1979-80 to meet the drought situation in their respective areas.

Acute drought situation has developed in several States. Over 200 million people, 123 million heads of cattle and over 38 million hectares of crop areas were badly affected by the drought, particularly in Andhra Pradesh, Bihar, Himachal Pradesh, Haryana, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh and West Bengal. This counpled with inadequate winter rains and unpredictable monsoons have further aggravated the drought situation.

Priority For Agriculture

AGRICULTURE, alongwith fisheries, animal husbandry and forestry, would remain to be the mainstay of the country's economy. All steps should, therefore, be taken to make it an instrument not only of food generation but also of employment and income generation. In other words agriculture will continue to be on the priority list in the Sixth Plan, as even in the eighties, 70 per cent of the jobs in the rural areas will have to come from the farm sector.

According to Dr. M. S. Swaminathan, Acting Deputy Chairman of the Planning Commission investments would also be made in 1980-81 to create an additional irrigation potential of 2.5 million hectares. An irrigation potential of 56 million hectares had been created in the last 30 years.

Enough cement would be allocated for implementation of the irrigation schemes.

The scope of the district development centres (DDC), he explained, would be much wider than the district industries centres.

Major investments in social security measures such as the 'food-for-work programme' would continue. These should be so designed as to make them instruments of economic growth and assets of a permanent nature, Dr. Swaminathan said.

Dr. Swaminathan said the Union Government would develop a plan frame in the next few months in consultation with the state planning boards. Additional assistance would be given to States to strengthen the planning boards so that the gap between planning and performance could be narrowed.

High Power Panel For Minorities

THE Government of India has set up a high power Panel under the chairmanship of Dr. Seyid Mohammad, former Minister of State for Law.

(i) To ascertain if the benefits of various fiscal policies of Government, both Union and States, really reach the minorities, Scheduled Castes, Scheduled Tribes and other weaker sections of society;

(ii) to identify the constraints or bottlenecks whereby incentives, facilities and other encouragements are not being fully availed of by them ;

(iii) to suggest ways and means by which the benefits of various fiscal policies, incentives, facilities and other encouragements reach them; and

(iv) to make recommendations with regard to other allied matters.

Irrigation Potential To Be Doubled

ACCORDING to Shri A. B. A. Ghani Khan Choudhury, Union Minister of Energy, Irrigation and Coal, the irrigation potential in the country will be doubled during the next 20 years. He has said that the Government's aim is to achieve 110 million hectares irrigation potential by 2000 A.D. The present potential is 53 million hectares and every year 2.5 million hectares of additional irrigation potential is being added which is unparalled in the history of any country.

Inaugurating a two-day 50th Session of the Central Board of Irrigation and Power in New Delhi recently the Minister said that according to the experts we can further add nearly 35 million hectares if we develop all inter-State and international rivers optimally. This would need cooperation amongst the States and the neighbouring countries and inter-linking river systems supplemented by storage at appropriate locations.

More Trade With Developing Countries

THE Prime Minister, Shrimati Indira Gandhi has called upon the affluent countries to encourage more trade with developing countries. Whatever be the differences on a new world economic order, there should be no disagreement on the need to eliminate poverty. It was for this that poorer countries should get a greater share of world trade, she added at a dinner hosted for Mr. Roy Jenkins, President of the commission of the European countries in New Delhi recently. □

Evaluation - An Integral Part of Planning

Manmohan Singh*

EVALUATION, together with plan formulation and implementation, forms an integral part of an effective planning process. A systematic review of planning strategies, tools, instruments, performance norms and achievements must constitute an essential element of an effective planning machinery. A timely feedback provided by the evaluation studies can help to introduce necessary corrective changes in the design as well as the implementation of development policies and programmes.

Planners in India have been conscious of the role of a sound independent evaluation organisation right from the beginning. Since its (the Central Programme Evaluation Organisation) inception in 1952, considerable thought has been given to the strengthening of the evaluation machinery. The Working Group on Evaluation under the chairmanship of Dr. V. K. R. V. Rao made several recommendations for strengthening the Central Programme Evaluation Organisation and also the state level machinery. A number of useful suggestions were also made by the Study Team on Machinery for Planning of the Administrative Reforms Commission. In 1967, the Planning Commission set up a Working Group under Dr. S. R. Sen on Training in Evaluation. This Group emphasised the need for training in evaluation and made a number of operational suggestions. The strengthening of the evaluation machinery was again emphasised by the Internal Reorganisation Committee of the Planning Commission set up in 1971 under the chairmanship of Shri B. Venkatappiah. The matter was again reviewed in 1972 by a Task Force under Dr. B. S. Minhas. More recently, training in evaluation has again been reviewed by a Committee under Shri S. S. Puri. In 1978, the Government appointed yet another Committee for review and strengthening of the Central and State Evaluation Organisations. This Committee has submitted its report recently.

All is not well

It is true that now evaluation machinery exists practically in all the States. The Central Programme Evaluation Organisation has brought out so far 112 reports and the State level organisations have brought out 907 reports. Many of these reports contain valuable data and information which have helped to improve the design and implementation of plan programmes. Yet it would be wrong to assume that all is well with our evaluation machinery. As has been pointed out by the Dubashi Committee, barring three or four States where evaluation organisations have come of age, in most other States they are still in varying stages of development. The quality of evaluation reports is highly uneven and the scope, methods and contents of these reports vary a great deal. In addition, very few States have evolved follow up procedures with the result that the primary objective of setting up an evaluation organisation for providing feedback input into the planning process is not being achieved. Evaluation organisations have been slow to recognise that the scope of evaluation studies has to be widened and deepened to cover, on a systematic basis, areas other than those traditionally included in community development or rural development programmes. As an instance there has been inadequate emphasis on evaluation of programmes in such vital areas as irrigation and power.

The Central Programme Evaluation Organisation has in recent years embarked on a new programme of quick or concurrent evaluation and its analysis of the programmes like food for work and rural water supply is highly valuable as an aid to improved programme formulation in these areas. Some of the shortcomings of the existing evaluation machinery are listed because of the need for a more effective evaluation machinery viewed in a broader context. We must go deeper to analyse factors in the uneven development of the evaluation organisations in various States.

Effective Planning Machinery

An effective evaluation machinery cannot exist or flourish independently of a strong and effective machinery for planning as a whole. Unfortunately, progress in this area has fallen short of expectations in a large number of States. Effective planning in a capital-scarce country like ours requires a high sense of economic discipline and a firm commitment to pursuit of rational policies for achieving accepted national targets and goals. In addition a highly skilled and professional civil service, committed to the goals of national development is essential.

The civil service must acquire new professional skills in several key areas. Considerable progress has been made in strengthening the capabilities of our civil service to shoulder its new developmental responsibilities. Nevertheless, it has to be recognised that conditions have arisen in recent years—both in terms of the emoluments and morals—which may make it increasingly difficult to attract high quality professional talent into Government service in the future—particularly when there are expanding and often more attractive opportunities in the private sector for talented persons with scarce skills. Apart from the long standing complaint of low pay scales whose real value has been greatly eroded by the rapid inflation of the past decade, the growing practice in many States of sudden, all too frequent, transfers of key officials dealing with vital developmental programmes is bound to affect the morale and efficiency of our development administration. It

**Member-Secretary, Planning Commission.*

From the valedictory address of the participants of the first training programme in evaluation methodology and techniques for the supervisory level evaluation personnel.

has to be recognised that a demoralised and discontented civil service can hardly play the role expected of it in our system of government.

Planning, an arena for political battle

Unfortunately, because of frequent changes in the political set up in several States and the intense pressure of competitive politics, the commitment of political authorities to the goals of planning has tended to weaken in recent years. There is need to develop a meaningful national consensus on the goals and instruments of planned development which has the broad support of all major political parties. Planning must not be seen as an arena for partisan political battles but as a truly collective national endeavour for social and economic development of the country. In the background of fiercely competitive political pressures, the development of a national consensus is not going to be an easy affair. But if India is to survive as a functioning democracy and at the same time achieve a reasonable rate of economic growth, there is no alternative but to develop such a consensus Major political parties must willingly accept a certain measure of self-discipline and restraint in the larger interests of the country as a whole. Our social scientists and research and training institutions can greatly help in the evolution of such a consensus by arranging orientation courses and programmes for leaders of various political parties—at the district, State and Central level—programmes designed to create in them a proper understanding and appreciation of the compulsions of planning for rapid economic development of a poor economy. In this respect, the initiative taken by Professor V. M. Dandekar and his colleagues of the Indian School of Political Economy at Lonavala in imparting training to leaders at various levels in Maharashtra is to be greatly welcomed.

Intertia and Lethargy

In the background of events described above, it is not surprising that the evaluation machinery's performance has not come up to initial expectations. Clearly, there is considerable influence of inertia and lethargy in the organisation itself. For example, while successive working groups and committees have laid emphasis on training as a means of improving the quality and effectiveness of evaluation, actual progress on the training front has been extremely tardy. As has been recently pointed out by the Committee for Training in Evaluation headed by Shri S. S. Puri, information received from the States reveals that training facilities for the evaluation personnel are lacking in most of the States. The same Committee has pointed out that the training facilities provided by the central Programme Evaluation Organisation are also not adequate. The PEO has been extending ad hoc training facilities in the methods and techniques of evaluation to the officials as and when nominated by the State Governments since 1962. Since 1968, after the recommendations of the S. R. Sen working group on Training in Evaluation, regular courses have been organised for the supervisory and junior level personnel. However, the magnitude of the effort is clear from the fact that only five courses of 9 weeks' duration for supervisory level officers have been organised since 1968 and all the five courses were organised between 1968 and 1972. Taking all these factors into account, the Puri Committee came to the said conclusions that the existing training arrangements for the evaluation personnel were far from satisfactory in almost all the States and the Union Territories. Considering that the evaluation organisations at the Centre and the States together employ 868 persons and taking into account the growing complexity of the task of evaluation, lack of adequate training facilities was bound to affect the quality of evaluation.

The Committee for Training in Evaluation has worked out a thoughtful design for the training of evaluation personnel at the senior, supervisory and junior level. It is hoped that the State Governments will fully cooperate with the Central Programme Evaluation Organisation to fill in the existing gaps in training within a time bound programme. Training programme must take account of the ever widening scope for evaluation in the process of development as also of the fast changing techniques of evaluation involving a growing emphasis on multi-disciplinary approach. New ways have to be found to incorporate into the design of evaluation studies influence of plan programmes on such entities as employment income distribution and resource generation capabilities. Techniques of interview have to be progressively reviewed and improved so as to minimise scope for biased assessment. All these are challenging tasks. Indeed, in many ways, the task of evaluation personnel is more difficult than that of other administrative personnel involved in the planning process. Like their other colleagues, they must have a thorough grasp of techniques of plan formulation and problems of plan implementation if they are to perform satisfactorily their task of evaluation. And in addition, they must have a highly developed faculty of observation at the grass roots, combined with ability to use modern scientific techniques or collection, organisation and interpretation of data. All this goes to show the heavy responsibility resting with the personnel engaged in evaluation. □

Steps Towards Self Employment

SHRI Ajay Kumar Panigrahi hails from Kashipur village of Keonjhar district, Orissa. After his matriculation he appeared in so many interviews, for small government jobs, without any success. This made him desparate He had some interest in electronics also but lack of proper training, institutionalised knowledge and above all finance came in the way of his starting the career

Ajay Kumar one day came across the Nehru Yuvak Kendra, where training in radio repairing for the rural youth was about to start and he enrolled himself for the training After completion of training he secured through the joint efforts of Nehru Yuvak Kendra, District Industries Centre and Orissa State Finance Corporation a loan of Rs. 3,700|-. With this financial help and training he started a radio repairing centre and is at present earning Rs. 25|- a day. He feels happy now that it was good he was not blessed with a small job.

FPO, Keonjhar

Training And Visit System in Agriculture Extension

Dr. A. K Sinha

THE Training and Visit System (T&V) is the latest intensive extension technology to distribute the gains of agricultural development. The system is one of the few World Bank-sponsored programmes launched in various developing countries of Asia. In India, a number of States have already adopted the system and a few others are in the process of doing so.

The T&V system is based on an administrative reorganisation with a declared emphasis on regular training and periodic visits to the target group of the village level agricultural functionary. It provides for training of trainers and of high level agricultural functionaries in the science and art of extension. The system promises not merely the development of a crop, nor an area or a particular group or community, but the agro-rural development of the entire string of village's falling within its jurisdiction through a select group of contact farmers. It thus aims the transfusion of known agricultural technology into the entire fabric of the rural society.

Six major elements

The six major elements of this system are, a single-line restructured organisational set-up, a family based moderate-sized group of contact farmers; regular fixed and periodic visits to the families; a timely, clear and precise form of message communication; an arrangement for infrastructural support for the supply of inputs and services, and a regular and autonomous arrangement for monitoring and evaluation of efforts and results. It is thus intended to be an administration-based systematic transfer of research findings to client farmers as also a feedback of field problems to client institutions. In the process, it is intended to provide, a bridge between the laboratory and the farm, and to reach the smallest, the poorest and the farthest farmer.

In a recent mid-term seasonal appraisal of the working of the T & V system in Haryana, some interesting aspects were noticed which need specific attention.

The need for the transfer of technology generally arose from the farmer's side basically for the innovative crops. For conventional crops, the farmers preferred to wait and see the results in the neighbours' fields.

The transfer of technology from the village extension worker (VEW) generally centred round the high-input, high-cost technology There was a general aversion to suggest low-cost technology, partly because the results were not spectacular and partly because the farmers' initial response was non-encouraging.

The timely and adequate supply of inputs, basically water, fertilisers, seeds and pesticides, were the measures of the farmers' satisfaction with the State assistance. The value of the extension effort was weighed in the capacity to fulfil the inputs demands

The fortnightly visits of the VEW were more than necessary in the off-season and less-than-necessary in the on-season. The frequency was especially desired to be stepped up in the sowing season.

*Director of Agriculture, Haryana

The impact points had a fixity and a generality t[illegible] defied quick gearing to emerging situations in particular survey, of continued failure of rains [illegible] the consequent drought.

The VEWs differed in calibre and competence [illegible] the fortnightly training course did not take notice and cater to, this difference. This was specially sig[illegible]ficant, when members of the village extension fo[illegible] comprised agricultural graduates and some were [illegible] even matriculates.

One cannot forget the poverty, ignorance, illitera[illegible] traditionality and resource-lessness of the farmer. [illegible] implies a tremendous burden on the technological [illegible]pects of the system, which must stretch itself far [illegible] wide, to counter the ills of our socio-economic s[illegible]tem. It is because of this that one may notice [illegible] preponderance of the same old class of the co-cal[illegible] progressive farmers in the reconstituted contact-gro[illegible] it is they again who come to the fore to take adv[illegible]tage of the new system. The reason is simple. [illegible] advantage is taken, as previously, by those who [illegible] take it and rarely by those who wait for the admi[illegible]tration to come to them or are hesitant and relucta[illegible] The threat of the take-over bid by the haves is [illegible] great to be ignored.

The failure of the feed back is often the cause [illegible] the failure of a system. While results may be av[illegible]able, reaction invariably is missing, jeopardising [illegible] entire stipulated exercise of mutually-correcting int[illegible]action.

Constraints of the system

The dramatic breakthroughs in research are [illegible]tricted to a few crops, mainly wheat and paddy, [illegible] give the feeling of revolutionising production. [illegible] cotton, sugarcane, millets, pulses, oilseeds, jute [illegible] other crops, revolutions are yet to come. Even in [illegible] former category the breakthroughs depend hea[illegible] on the high-cost technology, often much beyond [illegible] reach of the ordinary farmer. It is an agonisin[illegible] difficult, if not an impossible, task to balance the te[illegible]nological requirements with the utilising capacity [illegible] the farmer.

The single-line-of command, welcomed by depart-ntal officials, had simultaneously resulted in the ıaration of agricultural workers from the integrated)roach to the rural development and was tending vards compartmentalisation even within the Agri-ture Department. The extension workers and ɔervisors were refusing to shoulder works of con-ɔted nature and within the disciplines of T&V sys-n, even though they had time at their disposal.

The group of farmers that formed the new forma-ɜd group of contact farmers, were often the same l so-called progressive farmers, in spite of the en-aged holding-strata-representation system, that had ɜn taking advantage of the State administration ıemes and projects in the past.

The fixity of visits provided a strong system of su-rvision and the absence of the VEWs from their ıtions of duty could be detected with finality. pervisory checks, however, needed improvement, th in quality and frequency.

Financial support to the new arrangement was wel-med and appreciated, but operational transitional ɔblems continued to create confusion and needed to solved.

There was a sharp indication of some constraints ɜ personnel management, input-distribution net-ɪrk, technology transfer and monitoring and aluation. It is against this backdrop that the T & V eds to build up a self-corrective and a shock-absorb-ʒ system against the system, technology and manage-ɜnt failures, potentially inherent.

The T & V scheme envisages an organisational re-ucturing, almost an administrative overhauling, th a view to prepare a large band of missionary ricultural base-level workers, who could by persis-ıce, competence and perseverence, create a new der of transmitting agricultural technology to the ·thest corners. The band of these base-level workers rmally comprises three segment agricultural gra-ates largely young, mixed-aged matriculate agricul-ral officials and middle and old-aged semi literate velopment officials. Psychologically, by back-ɔund, by calibre and by training, this is a highly 'erogenous lot. Probably, each one of them, even ıss-wise, would not fit equally well in a particular 'a. This creates the problems of classification of ces and postings.

Assuming, however, that this has been ideally hieved there is no guarantee that each one of them ·ys at the place for a reasonably long time, say out four years, to be of much relevance to the ɔup of contact farmers, with whom he could really ıld rapport.

Most of the graduates, even other, have a tendency vards urban living, and hence a mere residential arter, if and when made available, may prove to be elusive incentive. And the motor cycle that aims provide mobility on duty, and purchased out of lividual loans may hardly be used for non-personal ɪrk.

The inadequate salary to the kingpin functionary of ' system is one of the reason for the absence of lication.

Constraints of technology

The relevant technology has not only to cater to the maximisation of gains, but also to the capacity of the client-farmer to afford it. Even the optimisation of resources, with the constraint of resources at the farmer's end, may be a will-o'-the wisp, constantly being changed to suit newer situations. Relevance has also to be seen not merely from the view point of the possible, but that of the practicable, as also of the desirable. Further, it has to take care of different levels of competence that need to be trained. Finally, to evoke a positive response, it has to take note of threshold at which the client-farmer stands with his competence, capacity and willingness.

Due to varied nature and the heterogeniety of the group of VEWs their training becomes a difficult task. It is a first rate training problem to teach a graduate and a matriculate simultaneously on the same subject in the manner which is not only intelligible and useful to both and meaningful to the system, but also capable of being used in the field. For the departmental and university subject-matter specialists, it would need a long gestation period.

The high-cost technology rests heavily on a strong input-application technology, which in turn has to depend on a strong distribution net work. Mere availability of fertilisers, seeds and pesticides is not enough. It is equally important that these are available in remote corners and at affordable price. And the areas which get them, the bulk of it is taken by the progressive farmer. To cap it, the problems of coordination, at various levels, especially at the grass-roots level, leave almost invariably a deep scar in peak consumption times. By not providing for an inbuilt input distribution monitoring sub-system, the T & V may perhaps take much out of its purview. For, once the system whets the appetite, it must ensure its fulfilment, too.

Development has always been hanging between the two conflicting claims of specilisation and integration. Integrated development approach, which has been stressed by the IRD and by the rural reconstruction programmes has been evident almost since independence The block development was primarily oriented towards this. We know the type of block development that has taken place over the years, and the nature of duties of the different functionaries involved. A severance of links is, therefore, necessary and partly inevitable. In the process, however, if the concept of integrated development suffers, which danger lurks in the T&V, then it will be a sad day, indeed. Perhaps, the entire question of command-and-advice relationship, within the broader spectrum of rural development, needs to be re-examined, and with it the emphasis on desegragation in the T&V.

Constraints of Evaluation

The quality of evaluation, would seem to be a major casualty. Agricultural statistics, has the dubious distinction of being highly colourable, and the opportunity to evolve norms of assessment of mere

extension of technology, would only seem to add further gloss. Not only is there the threat of statistical jugglery, but there is also a real danger of the loss of perspective and the character of the operation involved. The assessment of the impact of the visits may indeed centre round the statistical entries of the contact-farmers visited and the extent of adherence to the visit schedule. And the quality of training imparted may in time become judged by the number of sessions held and the courses attended. With the utilisation of practically the same staff, though with more specialised training, this would seem to be further compounded. For, with no measure of satisfaction in terms of concrete services, the entire system may be infected with the mere statistical approbations of training and visits organised, and the evaluator's performance may also hinge around it.

It is quite possible, however, to produce returns and reports on the working of the system to pin point what went wrong where and why. This may enable subsequent meaningful reviews. But the danger of claiming the maximum points for extension, in the factorial causation, in the process of development, and the minimum points for it in the process of failures of development, would continue to be a serious one in spite of objectivity. After all, how do you quantify the social impact, much less the psychological, that the system may have brought about, or perhaps may not be able to bring about ?

Further so long as the new system is attempted to be transplanted on the existing governmental procedures, the review and the rectification mechanism intended to be provided is bound to be a casualty. Action-oriented plans go ill with caution-oriented rules.

No system operates in a vacum, nor any innovation can be introduced that could be devoid of all deficiencies. A system has invariably to operate under certain constraints. It is, however, the objective of all human effort to help mitigate these constraints, and to build a system that is useful. In developing countries, the measure of development of farming would not only seem to lie in the maximisation of gains in total terms, but also in the equitable distribution of such gains. And the process of agricultural development in the under-developed countries perhaps would be much worse in the absence of the T&V system of extension But it is precisely this that would seem to point out towards the need for greater care and thought.

Notwithstanding the constraints the T&V offers a great hope for the weakest, poorest and the farthest of the farmers by percolating the benefits of research and management to the nooks and corners of the land. □

Scientific Technology for the Indian Farmer

"THE Indian farmers being essentially poor, requires a technology which would ensure higher yields with a low-risk factor and extension workers should not give any untested technology to him" said Dr M S Swaminathan acting Deputy Chairman, Planning Commission, whilt inaugurating a twoday National Workshop on "Training and Visit (T&V) Strategy in Agriculture Extension in New Delhi recently.

Dr. Swaminathan said that that "T&V" was system of management of extension work which would take time to build up What was needed now, was transmission to the farmer of location, specific agricultural technology developed in scientific institutions and agricultural universities. To ensure this, the extension worker himself needed to be equipped with such knowledge and there was hence need for a system of continuing education for such workers.

T&V projects have been already taken up in Assam, West Bengal, Orissa, Bihar, Rajasthan, Madhya Pradesh, Haryana, Gujarat, Maharashtra, Karnataka and Kerala. The system seeks to improve the level of agricultural production by large number of farmers cultivating mostly small areas, using low-level technology and traditional methods. Under this system, the extension service concentrates initially on the major crops and those aspects of their production which offer maximum scope for increasing incomes through relatively simple techniques of better crop husbandry. These techniques also call for little or no increase in cash inputs. □

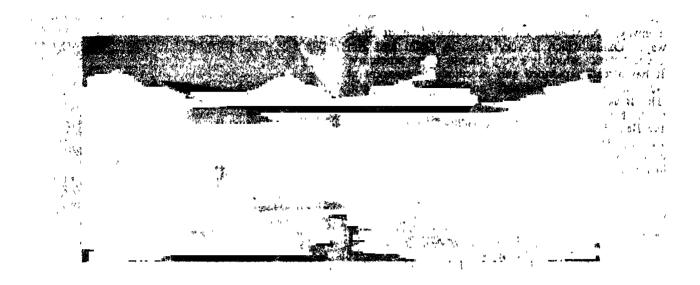
Farm Science Increases Food Productio n

OVER 1,500 personnel, working at 22 research stations in Tamil Nadu with the headquarters at the Tamil Nadu Agricultural University—in close contact with small farmers proved wrong the theory that only farmers with large holdings are able to make use of improved technology.

In Kodaikanal and Thadiankudisai, young scientists work on hill tops helping farmers, to take to new agronomy. The farmers are able to increase the production of potato in Ootacamund, tomato in Periakulam belt of Madurai district and pineapple in Thadiyankudisai, by adopting improved pest control measures and crop rotation methods.

As many as 22-high yielding varieties in tomatoes, bhendi, brinjal, chillies and snakegourd, have been introduced and the Periakulam Research Station concentrates on drought resistance study on vegetables. The variety PKM-1 tomato is a gift with an yield of 32 tonnes per hectare, carrot and cauliflowers with high yielding potential are propagated from the Kodaikanal farm research station. Pineapple, mandarin, and cardamom are unique in Thadiyankudisai. Over 93,000 hectares area is under horticulture in the State The fruit-bearing trees provide 16 lakh tonnes of fruits every year including 1 7 lakh tonnes of plantains and 4.5 lakh tonnes of mangoes. The horticultural research station at Periakulam has taken up the improvement of citrus cultivation by selection of clones control of pests and nematodes apart from raising fruits like mango, guava and sapota. Medicinal plants like digitalis and pyrethrum and aromatic plants like geranium, mint and lavender are raised and propagated This apart among the 117 varieties of apples evaluated in the Station Parline's Beauty with a mean yield of 220 to 270 fruits per tree and Kodaikanal-1 with 362 fruits are found to be idealy suited.

Tourism Promotion in Haryana

L. K. Bakhshi*

HARYANA State spans around the National Capital, New Delhi and constitutes a good part of the National Capital Region and many national highways pass through the State. To take advantage of all the highways leading to Kashmir valley, Simla, Amritsar, Jaipur or Agra, Haryana Tourism has provided new incentives for road travel on strategic points. The Karna Lake near Karnal and Pipli near Kurukshetra on the Delhi-Amritsar highway are very popular resorts and so are Dharuhera on the Delhi-Jaipur highway, Dabchick at Hodal on the Delhi-Agra Highway, Sohna on the Delhi-Alwar highway, Yadvindra Gardens at Pinjore on the Delhi-Ambala-Simla highway and Youth Hostel at Panchkula on Delhi-Chandigarh-Simla highway. The obvious strategy has been to create tourist facilities on these highways to make the travellers comfortable. These wayside spots have become destination points now.

Apart from these places, a number of other spots around Delhi such as Badkhal Lake, Surajkund, Sultanpur Bird Sanctuary are popular, not only popular with our domestic picnickers and tourists but also the foreign tourists.

A unique feature of Haryana Tourism complexes is that these have been named after birds as a part of the drive to arouse and maintain people's interest in birds. Now, there is a chain of 26 tourist complexes in the State which offers a vast range of tourist services comprising air-conditioned restaurants, and motels, camper huts, petrol pumps, shopping arcades, swimming pools with saunas, conference halls, plant-nurseries, emporia and conference rooms.

The facilities provided by the State Tourism are within reach of all kinds of tourists. There has been a conscious effort to create eating places where one can have inexpensive meals.

The State Tourism cares for those small things that are of concern to the tourist personally. A child is a most honoured guest and every effort is made to be most polite and hospitable to the children.

*Project Officer, Tourism, Haryana Tourism

Landscaping has been an integral part of the tourist effort. At all the complexes, it has been endeavoured to beautify the environs. The more notable examples of landscape are at Dabchick-Hodal, Karna Lake and Surajkund. A significant emphasis is on indoor plants. At Badkhal Lake also there is a green house.

To help sustain this fast extending network of tourist complexes, an Institute of Catering to professionally train the staff in various categories is being run by the Tourism Department at Panipat. The State Tourism is offering these training facilities to other States as well. A number of steps are being undertaken to bring about certain measure of standardisation in terms of daily use in the tourist complexes—a foodcraft centre has been started in the State Institute of Catering at Panipat, a poultry unit at Karnal and a centre for grinding masalas and spices, etc. at Badkhal are being successfully run.

Since September 1, 1974, the Haryana Tourism Corporation has been running the tourist complexes in the State. It has set up its own design wing, horticultural wing, landscaping wing, electrical wing, electronics wing and publicity wing.

Another area where the State Tourism has made a break-through is in providing consultancy services and contracting for turnkey projects in the field of planning, development, construction and commissioning of modern tourist complexes and facilities throughout the country. The HTC has taken up these consultancy projects in the State of U. P. at various places like Mathura, Sikandra and Agra on the Delhi-Agra

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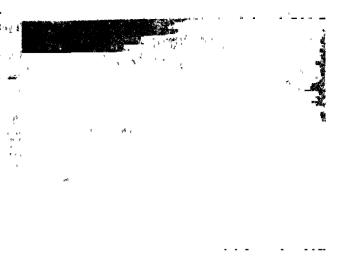
highway, Nawabganj on the Lucknow-Kanpur highway, Okhla which is very close to Delhi and Jim Corbett Park which is a very famous game sanctuary. It has already planned and executed a restaurant at Narora, near Bulandshahar, and is also managing it The Beas Project Administration has awarded the work of landscaping and environmental development of the Beas Dam at Pong which is eight km. away from Talwara Township in the Hoshiarpur district of the Punjab of the proposed Mukherian-Talwara-Nurpur highway.

Appreciating the Haryana Tourism Corporation's expertise in the field of architecture and landscaping, National Hydro-electric Power Corporation of India (A Government of India Undertaking) has entrusted the job of environmental placement of their Baira Siul Project to the consultancy cell of the HTC. Some other States are also negotiating with the HTC to utilise its consultancy services.

The State Tourism was adjudged the best orgnisation in tourism by the Indian Chapter of Pacific Area Travel Association in the year 1975 and was given PATA India Chapter Chairman's Award. At the Feel India Tourist Trade Fair, 1977 in Madras, where the dancing Peacock-shaped pavilion was put up, the HTC was given the best pavilion award Similarly, at Kathmandu (Nepal), during the Travel Agents' Association Convention held there in March, 1979, the Haryana Tourism Pavilion was adjudged the best and the VASANT KOTAK TROPHY for the Best Pavilion was awarded to Shri Ashok Pahwa, Managing Director, the Haryana Tourism Corporation.

Motel at Surajkund

The Haryana Tourism's new Tourist Complex at Abushehr on the Hissar-Dabwali-Rajasthan road is being given final touches. The new motel comprising four air-conditioned double-bedded rooms, including one deluxe room, a big restaurant and a beautiful waterbody will be a great boon for the travellers on this road as well as the people of Rajasthan, Punjab and Haryana, residing in Dabwali, Sirsa and the neighbouring areas.

To help guide the tourists, the Haryana Tourism is maintaining Tourist Information Offices in Delhi, Bombay and Agra, where the tourists can get their accommodation booked in advance. □

Sultanpur Tourist complex

Tribal Farmers of Jagdalpur

Dr. R. S. Mishra and H. C. Jain*

AMONG the Indian states, the largest number of tribal people live in Madhya Pradesh where they numbered 83.87 lakhs, constituting 22.06 per cent of the total tribal population of the country.

Research Methodology

The present study deals with mainly the pattern of cultivation, farm expenses, gross and net farm income of tribal farmers of Jagdalpur block having the highest tribal population of Bastar district in M.P.

A list of villages which were financed by the bank was prepared and then the villages where more than 10 tribal farmers borrowed from the bank were selected for data collection. These villages were "Kurendi" and "Markel" where 72 and 12 tribals respectively borrowed the money from the bank.

The farmers who borrowed loans from the bank and other sources were categorized into two groups, viz, (a) small sized farmers (below 8.5 acres) and (b) large sized farmers (above 8.5 acres) on the basis of their farm size area criteria adpoted by the bank in that area All the tribal borrowers numbeing 84 from these two selected villages were interviewed. The data pertain to the year 1978-79.

Characterstics of sample farmers

The general characteristics of sample households were also studied. The data revealed that all the households belong to the 'Oraon Tribe'. Among the sample house-holds, joint family system was more popular compared to nuclear system.

The occupational structure has indicated that cultivation was the main source of income to all of them. There were 24 house-holds who were also supplementing their income by casual labour jobs, 5 households were engaged in some service and 3 house-holds were engaged in some petty business.

As per literacy attainments, out of 84 respondents, 10 respondents, (11.9 per cent) were literate. Among the literate, seven received education upto primary level (V class), two attained education upto middle standard (VIII class) and remaining, received education upto high school standards (X class).

So far as the social status is concerned, only 3 respondents were the members of Panchayat and none was the member of a cooperative society.

Cropping Pattern

The cropping pattern of sample farmers is dominated by the kharif crops. Among kharif crops, paddy is grown predominantly in the area.

On the basis of area under different crops, it was observed that kharif crops covered 91.41 per cent of the total cropped area of large farmers and 97.53 per cent of small farmers respectively. In the absence of irrigation facilities, area under Rabi crops was much less, having on an average 20.34 per cent.

The area under irrigation was found less and the total area under irrigation was reported 10.93 ha. Out of this 7.29 ha. of irrigated land fall in large farmer group and 3.64 ha. to small farmer group.

Income from different sources

The farmers derived income from a number of sources like cultivation, livestock products, labour jobs, including service and collection of forest products. The average income per head was found to be Rs. 548.57 during the year among the sample farmers of which 44.66 per cent came from agriculture, 2.13 per cent from livestock products, 35.76 per cent from labour jobs and remaining 17.45 per cent from collection of forest products.

This income varied on the basis of size of holdings and was found higher among the large farmers as against the small farmers. The per income derived by the large farmers was Rs. 850.10 and it comprised Rs. 388.51 (45.69 per cent) from agriculture; Rs. 18.33 (2.16 per cent) from livestock products, Rs. 310.03 (36.47 per cent) by labour jobs and Rs. 133.33 (15.68 per cent) from collection of forest products.

The small farmers derived income from various sources. It was found Rs. 472.04 which covered Rs. 198.81 (42.12 per cent) from agriculture; Rs. 9.83 (2.03 per cent) from livestock products; Rs. 16.60 (34.02 per cent) from labour jobs and Rs. 102.80 (21.78 per cent) from collection of forest products.

Comparatively large farmers were more dependent on agriculture than the smal farmers who were dependent more on non-agricultural sources of income. Moreover, agriculture was reported to be the main source of income followed by labour jobs, which contributed 36.46 per cent income in case of large farmers and 34.02 per cent in case of small farmers.

*Professor and Head and Asstt. Prof. Deptt. of Agricultural Economics and Farm Management, J.N.A. University, Jabalpur.

On an average a sample house-hold spent Rs. 221.78 per head on family consumption during the year under reference. It was 79.41 per cent of the yearly net income.

The sample farmers spend 79.10 per cent per head on food Their main consumption is rice and rice products. They satisfy their demand of mutton, chicken and eggs through their own cattle and for other type of meat, they generally go for hunting and for fish they mostly go to other's ponds or government ponds.

The farmers belonging to large sized group spent 80.24 per cent or Rs. 227.47 per head which is slightly higher than small farmers. They incurred 75-96 per cent per head on food consumption alone.

On clothing, the sample farmers' expenditure was 8.25 per cent or Rs. 18.30 per head, because they are coming under the influence of urban people due to the change in the evironment.

Intoxicants which include tobacco, liquor, came next to food and cloth comprised about 4.52 per cent of the total expenditure. The per head expenditure on intoxicants in case of small farmers was found to be Rs. 13.91 and the large sized farmers spent Rs. 12.82 per head. The small farmers were very fond of using intoxicants. During the investigation, not even a single tribal farmer was found without using liquor etc.

The expenditure on housing, and repairing of implements was 0.57 per cent or Rs. 1.26 per head. Since the material which the tribal people used for construction and repairing of their houses is mostly free of cost, thus the expenditure on repairing of houses and on implements was marginal.

Expenditure on fuel and lighting among the sample farmers was 1.36 per cent or Rs. 3.01 per head. It was low due to certain reasons. Tribal farmers collect wood for fuel from the forest and hence are not required to spend on it. The use of lamp in the night was found to be rare.

In social ceremonies the sample tribal farmer spent a considerable proportion of their total expenditure. They spend 3.95 per cent or Rs. 8.76 on social and religious purposes.

The expenditure on other items like medicine, toilet and on education was 2.25 per cent of the total expenditure or Rs. 4.99 per head.

It shows that farmers were having a subsistance type of consumption budget which covered more than 75 per cent on food items and left very little to be spent on the other items of consumption.

It clearly indicates that the farmers spent almost all the income of their family in meeting the day-to-day needs and nothing is left as saving for investment purposes. This means that they need credit for business and even for consumption. □

Betla National Park

THE Betla National Park,about 200 kms south-west of Patna in Palamau district offers a fascinating study of wild life in natural surroundings, studded with tree-clad hills and valleys. The National Park covering an area of 979 sq. km. has a large variety of wild life. According to Shri R.C. Sahay, Deputy Director of the Park, Betla has 42 tigers, 50 elephants, 800 sambhar, thousands of wild boars and pythons as long as 15 to 18 feet.

Most innocent of the lot are the spotted deer seen moving in herds The Park authorities provide jeep fitted with spotlight to the visitors on payment. As the spotlight falls on herd of deers they watch innocently with eyes glowing like electric bulbs. Scared rabits and foxes scramble about and the wild boars rustle in their layers The most coveted sight in the Park is a majestic gaur (bison). It is about seven feet high, tight muscles, glistening dark hairs and white feet.

The Palamau National Park was declared in 1974 as a Tiger Project Resserve. The tiger population in Betla has increased from 28 to 42.

The Betla Park attracts migratory birds from as far as Siberia and north European countries. Pingolia is one of them. The young ones left behind by these birds at Betla ultimately find their way back to the place of their origin !

When the water holes in the Park dry up the elephants and tigers move to Baresanrh forest along the Koel river. This area has been included in the National Park.

The mamalian fauna to be seeen at Betla include langur, rhesus, cheetal and gaur. Among other important varieties are sambhar, barking deer, blue-bull, wild boars. The tiger and leapord are carnivorous animals.

A plan to enlarge the tiger zone in the park has been submitted to the Government for implementation during the Sixth Plan. The Park needs funds for expanding its museum section. At present it is housed in a small room. The valuable skeletons of tigers, dogs, deer, and a 15 ft. long cobra are housed in the museum.

The Betla Park attracts about 20,000 visitors every year. Its earning comes to Rs. 15 lakh only and the expenditure is limited to Rs. 4 lakh.

Less than a century ago, India was one of the great reserviors of wild life in the world. In India, wild life and birds have always received the protection of religion. It is a common knowledge that indiscriminate destruction of wild life in recent years has disturbed the balance of nature.

Forests are the home of wild life. Forests comprise plants (flora), animals (fauna) and avifauna (birds) In view of the importance of the productive, protective and the biaesthetic functions of forests, a number of steps have been taken for the development of forestry in India.

In 1972, the Wild Life (Protection) Act was enacted as a national act. Almost all the States have adopted it. Wild life is treated as a national asset under the Act. There are about 200 wild life sanctuaries in India and 22 national parks. In wild life sanctuaries killing, hunting, shooting or capturing of any species of bird or animal is prohibited.

J. N. Sinha

Comprehensive Access to Primary Education

S. Sreedhara Swamy*

COMPREHENSIVE access to Primary Education (CAPE) is a bold and innovative project launched during the year 1979 in the direction of universalisation of elementary education. The strategy and approach are so refreshingly new that an attempt is made to reach out the children, wherever they are and who are out-of-school and educate them. It does not make obligatory for them to come to school, unless they so desire. Even though children below 14 years of age are legally prevented from employment under The Employment of Children Act, 1938, enacted 40 years ago, the child labour continues to be a reality. According to 1971 census one crore and seven lakh children are working. Male children constitute 5.29 per cent of male labour force and female children constitute 9.13 per cent of the total female labour force in India. Economic backwardness of people and low per capita income of parents do not leave any alternative than from pressing their children into work force. According to the estimates of the Planning Commission, 60 per cent children drop out after initial enrolment in the classes I to V and the rate of drop out is much higher—75 per cent in the classes I to VIII. The first draft of the VI Plan envisages a multiple entry system and special condensed courses of non-formal education for the grown up children in the age group of 9—14, who have never been to school or dropped out so early as to become illiterates. Special emphasis will also be laid on programme for children in the age group 11—14. The VI Plan noted, "it has been the experience that these children can be taken to the level of Class V in 12—24 months". A system of part time, non-formal continual education will be designed for children. "The rule will be that every child in the age group 6—14 shall attend school, on a full time basis if possible, and on a part time basis, if necessary for those who cannot, mainly for economic reasons, attend full time education".

In this context the Comprehensive Access to Primary Education (CAPE) becomes meaningful. The credit for planning this innovative venture goes to Sri J. Ratnaike, Educational Advisor, UNESCO. Reaching the out-of-school children is the basic philosophy behind this project. The existing primary school curriculum and poor economic condition of children have been identified as two main causes of non-enrolment and low attendance in schools. Out of every 100 children who enter Class I, only about 40 complete Class VI and only about 25 complete Class VIII. The rate of wastage and stagnation is particularly high in rural, tribal and urban poverty areas and among children from scheduled castes, tribes and backward communities. Apart from economic reasons girls have to look after their younger brothers and sisters, help in the household work and even work in farms etc.

Comprehensive Access to Elementary Education launched by NCERT in 1979 plans to reform curriculum by giving importance to local specificity making it more flexible and relevant. Elementary teacher education institutions which are around 1,000 in our country, have been picked up as main instruments for bringing about a change in the curriculum. The trainees, prospective teachers of elementary schools of these institutions would be dispersed to rural areas to conduct surveys, locate learners and their characterstics, expectations and needs and prepare the relevant learning materials. These home produced learning episodes, designated as Production-cum-Training Modes, will be refined and processed in a state level workshop. The help of block level specialists such as agriculturists, block development officers, extension workers, health bureaux etc., is enlisted.

The project envisages a more effective organizational set up. While NCERT is at the apex as the Central Resource Centre, Regional Decentralised Resource Centres at the State, Third Level Decentralised Resources Centre at the teacher education institution, Block Level Decentralised Resource Centre, Village Level Decentralised Centres and and at the grass root level Primary School Learning Centres have been visualised. For the time being, primary schools themselves are treated as the basic learning centres. The expertise available in Mahila Mandals, Youth Clubs, Yuvak Mandals, Nehru Yuvak Kendras, Vocational Training Centres also will be utilised.

The present project assumes that the goal of universal elementary education can be achieved through full time as well as part time schooling, providing for a convergence of formal and non-formal education. The part time and non-formal education programme, however, will be designed for children between 9—14 years as children below 9 would not be mature enough to benefit from this mode of education. As a basic requirement for decentralised curriculum, themes or topics for learning episodes will be located and identified, as far as possible, on the SITE, so that they reflect with accuracy and validity, the relevance to the learner's needs. □

**Reader in Education, Osmania University, Hyderabad*

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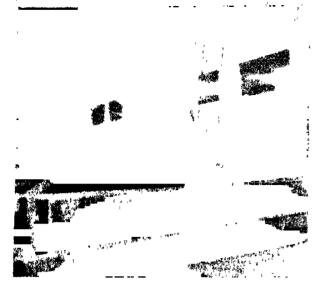

Crafts Centre, Along in Arunachal Pradesh

Agricultural ope

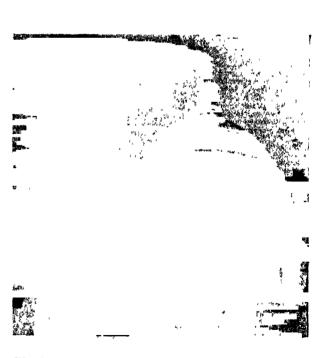
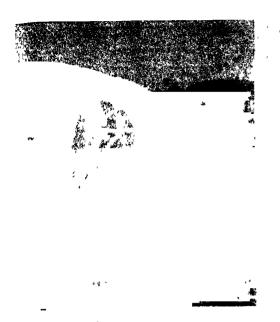
"What holds a country together? Basically the people's love for it and willingness to work and sacrifice for it. Of course, this is not entirely altruistic for each person knows that his interest is intrinsically bound with his country's future."

Shrimati Indira Gandhi

Integrated Developr

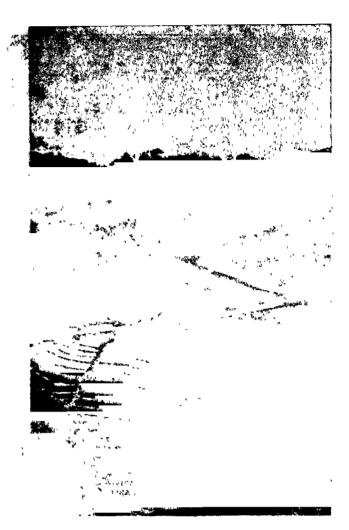
"POVERTY in the midst of plenty" is abundantly evident in the North Eastern Region of India. Embracing a land surface of 2.5 lakh square kilometres, the north-eastern region accounts for 8 per cent of the total area of the country and is endowed with an infinite variety of resources including petroleum on the one hand, and rare fauna on the other. More than half a dozen major rivers, besides the mighty Brahmaputra and its scores of tributaries, make the land very fertile, besides providing one of the large reservoirs of hydel potential.

Nature's bounty to the region has proved to be a blessing as well as the cause of its backwardness. The geographical structure, criss-crossed by numerous lines of hills, and endless streams of rivers made the communication, to-and-within the region, immensely difficult. Thus the geographical isolation coupled with a series of socio-political and historical disadvantages dragged this region out of the caravan of progress. No wonder when freedom dawned, the people of this region were found to be educationally backward, economically impoverished, socially con-

*Our Senior Correspondent at Gauhati.

The famous, Kamakhya Temple, Gauhati, Assam

ınachal Pradesh

ɔf North East Region

Bc/baruah*

ithun, an animal which is sacrificed and eaten and also exchanged for a bride

Ginger Cultivation with improved varieties at terraces in Nungba, Manıpur

fused and politically frustrated. The rapid expansion in the field of education which took place after independence, exposed the people to the glow of new ideas, which was pulsating the rest of the nation for decades earlier. With the onset of education at advancement, a new consciousness for political identity and a new urge for the fulfilment of socio-economic aspirations has became evident.

The political instability which was witnessed in some parts of this country for over a decade led the Government to devise certain effective measures as a permanent remedy for socio-political tensions and to accelerate the pace of progress of the hitherto neglected region. The north eastern region was reorganised and a regional body styled as North Eastern Council, to look after the common economic interests of the different States and Union Territories, that have come into being as a sequal to reorganisation was constituted The constitution of the North Eastern Council, in 1972, may be described as one of the significant events in the direction of planned and co-ordinated development of the five States and the two Union Territories. Although, at the begining, there were

Introduction of mechanised farming in villages of Manipur

certain misgivings about the functions and utility of the NEC, the experience of the last few years has proved beyond any measure of doubt, the efficacy of the setting up of such a regional organisation.

During the last seven and a half years, the NEC has been engaged in identifying the basic problems, assessing the potentialities of the region and setting in motion the much-needed pace for integrated development.

In view of the prevailing handicaps like paucity of locally available financial resources, dearth of trained manpower and uneven development within the region itself coupled with the urgent need for rapid development, it was inevitable to identify the most pressing needs and thus to embark upon the process of implementation according to discreetly selected priorities. As the process of modernisation could seldom be ushered in without development of adequate power, it became vital for the NEC to associate itself in supplementing the efforts of the constituent Units in generating power. With its power generation from all resources not reaching even 400 M W this region today stands far behind the rest of the country in this respect. The per capita power consumption in this region is only 25 K W H against the national average of 120 KWH. Hardly 10 per cent of its villages are electrified, against the corresponding high figures in neighbouring State of West Bengal not to speak of States like Punjab and Haryana, where almost all the villages have electricity supply. The Kopili-Hydro Electric Project which will harness the water of the Kopili river is by far the largest regional scheme, undertaken by the NEC. Executed through a corporate body under the centre known as North East Electric Power Corporation, the Kopili Project will generate 250 M W power, when both its phases are completed by middle of 1982. The North Eastern Council has also been quite keen to ensure equitable distribution of whatever power is available within this region, so that co-ordinated growth is promoted and the possibility of lop-sided development is avoided.

The setting up of a thermal power station in Garo Hills has been engaging the attention of the NEC for quite sometime. The project estimated to involve an expenditure of several crores of rupees, is now in the preliminary stage with works like land acquisition, development, construction of approach road and quarters and placement of orders for machinery and so on being initiated. The NEC will also finance the installation of Kemeng Hydro-Electric Project after the completion of investigation of the project. In view of the enormous water resources in this region, the NEC has given considerable emphasis on the programme of undertaking investigation for hydel projects. A major multipurpose project is under investigation at Tipaimukh, to generate power and to moderate floods in Barak Basin. The North-East Electric Power Corporation has also started investigation of important power projects like Ranganadi, Papu, Damwe and Tuivai which will involve an overall cost of Rs. 600 crore when ready for commission.

Young Arunachal girls husking in their household granary

One of the major factors impeding the progress of this region is the inadequacy of transport facilities. Except Assam, the rest of the units of the region have virtually no rail link. Not only the total length of railways falls far short of the requirement, but the hurdle caused by the change of gauge has proved to be a major handicap. The NEC has played a significant role in convincing the railway authorities to extend the broad gauge line from Bongaigaon, and also to set up six more new railway lines connecting the States like Nagaland, Meghalaya, Arunachal Pradesh, Manipur, Mizoram and Tripura. The NEC has also conducted a feasibility study to explore the possibility of starting feeder inland water routes on the tributaries of the Brahmaputra and the Barak.

Cups and Vases from NEFA

Besides implementing scores of schemes to lay new routes of regional importance, the NEC has contributed towards construction, repair and improvement of internal road system of the region. An amount of Rs. 26 crore has so far been spent on the communications. The second bridge over the Brahmaputra at Bhomoraguri sponsored by the NEC will impart a new dimension to the communication system of this region after its completion in 1985.

Agricultural and Allied Fields

Agricultural methods are cut-moded and the situation is aggravated by the wide prevalence of jhum cultivation, involving a lot of wastage. The NEC has played a significant role in weaning away the tribal [illegible] from the old practices of jhumming and also in introducing the modern methods of cultivation. Through extension services efforts have been put forth to induce the tribals accept improved practices, improved seeds. Regular supply of inputs has been ensured. A number of seed and nursery farms have already been set up under the auspices of the NEC.

Alongwith many other schemes in the field of agriculture the NEC has conducted a number of short term courses in agriculture and allied subjects, expanded the training facilities in Assam Agricultural University and set up a number of Foundation Seed Farms for various crops.

The north-eastern region grows a large variety of fruits and its favourable agro-climatic conditions can further be exploitated to boost their production. The NEC. has set up a number of fruit nurseries in order to promote fruit cultivation in the hills as well as the plains.

Already the region is famous for its tea and jute. Now it has been revealed that the place is ideal for coffee, rubber and cashewnut plantations. The NEC has chalked out a programme to establish in the constituent units nine coffee nurseries of which seven will be set up shortly. A rubber nursery has been set up at Tripura and one more will come up very soon. The Planning Commission has recommended a new

Folk Dance by the Mishmis of Lohit Division in NEFA

scheme to boost the tea production and accordingly demonstration plots have been set up. The North-Eastern Council has approved the scheme to launch the Regional Agricultural Marketing Corporation which deals with the problems of marketing and related matters pertaining to agricultural, horticultural and animal product. A detailed survey in selected areas has been conducted to reclaim and develop land for the purpose of agriculture. Exploration of parts of Assam, Meghalaya, Nagaland, Tripura and Manipur to tap ground water had been taken up during the Fifth Plan period.

Considering the immense potentiality of the region for development of dairy, poultry, piggery and other domestic animals and birds, the NEC has launched a number of schemes to set up regional breeding farms for cattle, pigs, sheep and other animals. The Biological Product Station at Khanapara Veterinary Complex is another project financed by the NEC.

Favourable conditions for the development of fisheries are in abundance. The NEC has set up a Regional Fish Seed Farm in Nagaland, High Altitude Fish Seed Farm in Arunachal Pradesh, Regional Fish Pituitary Gland Bank in Tripura and has taken up the survey of Bheels.

A few more schemes like 'Aquaculture potentialities' in Takmu Fisheries in Manipur, 'Demonstration Project on Aquatic Weed Control' near Gauhati and Regional Grass Carp and Exotic Fish Seed Farm are also to be taken up shortly.

In the field of mineral exploration, also, the NEC is playing a vital role. Apart from implementing schemes to locate minerals in the bowels of mother earth, the NEC has been engaged in the task of removing constraints like inaccessibility to the sites and also providing facilities for expansion of the programme of minerals exploration. An aeromagnetic survey has also been undertaken through National Remote Sensing Agency and the NGRI. Along with exploration, is proceeding the programme of study and research for utilization of available minerals for industrial purpose. Setting p of mini-cement plants in suitable areas of the region also forms a part of the NEC Plan.

Development of sericulture forms yet another important aspect of the NEC Plan. The programme in this field includes expansion of training facilities and setting up of Muga, Oak, Tassar and mulberry nurseries.

The North-East Region is known for the beauty and glory of its handicrafts and handloom wares. These crafts need patronage and support from the Government on account of the onslaught of the fashionable and more sophisticated products. The NEC has played a significant role in setting up of North-East Handicrafts and Handlooms Corporation to promote market and improve designs and textures.

Improved varieties of Pine apple grown in Manipur

The NEC has been expanding its sphere of economic activities every year and is emerging as the foremost advisory organization in the country engaged in Regional Planning. Among the other laudable activities of the Council, mention must be made of the Regional Medical College at Imphal, Engineering College at Tripura, Regional Pharmacist Institute in Agartala, Graduate Nursing College at Gauhati and Regional Police Training College at Barapani.

The NEC has already implemented a host of schemes involving an amount of about Rs. 100 crore and is to implement a Rs. 64.50 crore Annual Plan in the coming financial year. The current years' plan of Rs. 47 crore is being utilized effectively.

The success of the plans and schemes of the NEC, it is hoped, will pave the way for accelerated growth of the North-East Region and will place her among the most advanced parts of this great country. □

Agrarian Structure and Rural Development

Dr. P. S. Pandey *

INDIA'S experience since independence shows that there is a close inter-relation between agrarian structure and rural development. An important precondition for the success of plans of rural development is that the assumptions regarding the structure of rural economy underlying general and specific plans must correspond to the facts of rural life

An outmoded agrarian social structure is a serious obstacle to the modernisation of agriculture and rapid rural development. We know of certain social practices which definitely have an adverse bearing on the economic progress of the people concerned. In most of the areas of Uttar Pradesh local custom does not permit the higher caste people viz. Brahmins, Thakurs and Kayasthas, to handle plough. Consequently the land owners amongst these caste groups depend on hired or attached labour for most of their agricultural operations. The sample enquiry conducted by the Patel Commission in four districts of eastern U P. viz. Ghazipur, Azamgarh, Jaunpur, and Deoria, revealed that the percentage of attached labourers to the total labourers in these four districts was 40 9 as compared to 6 in Sitapur and 4.2 in Mathura. To the extent that such a practice exists, it definitely tells upon the productivity of land. The hired or attached labourers or cultivators (without ownership of land) cannot take interest in either the permanent improvement in land or in putting adequate inputs. One of the reasons of economic disparity between western U. P. and eastern U. P. is that in the former, big cultivators with large holdings are generally low caste people viz. Jats and Yadavas doing entire cultivation work themselves and in the latter, high caste people viz. Brahmins, Thakurs and Kayasthas are big land holders depending upon other specially attached labourers for agricultural operations. For this reason the schemes of development are likely to be less effective in the areas of eastern U. P.

The agrarian structure plays a crucial role in shaping the speed and spread of rural development. Our inegalitarian agrarian structure is not merely a serious impediment to rapid rural development, it is also the principal cause of distorting the results of development. Such a structure is to be squarely blamed for the unequal distribution of the fruits of development leading to widening of the disparity of income and wealth. The upper classes who have cornered the bulk of the new prosperity have also succeeded in consolidating their political power causing current tensions in rural areas.

But as things stand the explosion has started taking place not due to any "forceful onslaught from outside" but as a result of inner contradictions of the agrarian structure itself. The militant land occupation movements and wage struggle of the agricultural workers, the militant struggle of the tribal people against the exploiters like Mahajans and landlords and armed actions of the Naxalites have all served to highlight the incompatibility of agrarian relations to schemes of rural development. On the one hand, persons owning large areas of land have benefited from rural development programmes greatly. On the other hand, small land owners have also received some benefits but their ability to make full use of irrigation facilities and other things is limited due to lack of capital. The community development programme and green revolution launched with much fanfare, in the absence of required institutional reforms, utterly failed and bulk of the benefits of the programmes went to majority of land owners The landless agricultural workers, sharecroppers and small peasants derived meagre benefit from these programmes The green revolution not only helped to widen the gap between the rich and the poor in the coutryside but also increased regional imbalances in the States with serious political consequences. The case of separatist agitation in Telangana may be cited as an example.

The increasing land value have whetted the appetite of big landowners to acquire more land and expand the size of their holdings. Many a small holder has been obliged to mortgage or sell his land to big landowners. The position of the sharecroppers has considerably deteriorated. The rise in agricultural productivity and land values has prompted the landowners to get rid of their sharecroppers. Thus tenants and sharecroppers are driven to the wall.

After Independence

The Governments at the centre and in the States undertook many schemes of agrarian reforms to remove the economic injustices to the rural poor and

*Reader in Sociology, University of Gorakhpur

to increase agricultural productivity. Legislation for the removal of intermediaries were enacted by most of the States. The rent collecting landholders or zamindari rights were abolished but the oft-repeated aim of "land to the tiller" remains unfulfilled to a large extent even today. *All the agrarian legislations and measures* merely helped to transform the old feudal relations into capitalist relations, gradually creating a strong class of capitalist landlords and farmers out of the old feudal landlords and well-to-do peasants.

But at the same time, the condition of the agricultural workers, poor peasants and tribal people who constitute over 80 per cent of the rural population is deteriorating. This is the main reason for the cracks and tensions in the agrarian set up which are in reality upheavals, struggles and revolts of the rural poor that are erupting in our country today.

The social purpose of plans of rural development can be achieved only when through going institutional changes are effected into the land relations. Techno-economic approach alone is not enough to solve the problems of the rural poor. Higher allocation for agriculture without radical land reform will only help the 'Kulkas' a strong class of capitalist landlords and farmers. Change in agrarian relations is a pre-condition for the success of schemes of rural economic growth. The agrarian structure most favourable for agricultural transformation is the one where peasant owner is the predominant element in the agrarian set up as in the case of Japan, Taiwan and South Korea, Punjab and Haryana in India

The crux of the agricultural problem in our country is giving land to the tiller i.e., to the agricultural labourer and poor peasants who constitute an overwhelming majority of the agrarian population.

In the present dispensation no improvement in the condition of these poor people in the rural sector can take place without giving them the land to provide a decent livelihood with improved methods of cultivation. For this, it is necessary to amend the land ceiling laws radically which will result in surplus land for distribution among the landless peasants and labourers.

The break-up of large holdings and creation of peasant agriculture would pave way for the transformation of subsistence-oriented peasant into a commercial farmer. For this transformation mere break up of large holdings and their redistribution among landless labourers is not enough, what is required is creation of an infra-structure for growth and a high level of cultural development of the peasantry. We can achieve economic growth only when there are fundamental changes in the social structure and value orientation of people. The social structure should be flexible giving scope for social mobility; there must also be alterations in the value orientation system to enable an individual to use the opportunity provided by the flexibility of social structure; the individual must be rational, time conscious and future oriented. He must have strong motivation to make the full use of his ability and opportunity; he must have a sense of responsibility and commitment to work; he must utilize his leisure to improve his education and training. It is only when there is a change in the agrarian social structure and peasant value system that 'here can be real economic growth in India. ☐

Modern Technology and Rice Growers of Puri District

Shanti Sarup and S. C. Gupta*

THOUGH the agricultural scientists have demonstrated higher yield levels of rice crop with modern production technology yet the actual farmers' yields continue to be low and far from satisfactory. The gap between the potential yields under farmers' conditions and actual farm yields vary from region to region and mostly arise because farmers use inputs or practices other than optimal resulting in low yields. This non-optimal use of improved practices may be due to inefficient or inadequate extension activities besides other physical or socio-economic factors on the part of the farming community.

Here is a study of the extent and intensity of adoption of selected improved techniques and the reasons for their non|partial adoption among rice growers in Ghorodia, Sisupada, Beguniapada and Jorokani villages of Puri district of Orissa. Orissa is one of the important rice growing states of India. The improved practices or operations whose adoption was examined in the area are :

(i) cultivation of high yielding variety (HYV) seeds.

(ii) application of chemical fertilizers,

(iii) application of plant protection chemicals and

(iv) Use of improved implements-iron plough.

Adoption pattern and intensity

The total index of adoption, of at least one improved practice, is the highest in Ghorodia village (81.5) while in other villages it varied from 60.0 to 71.7 The adoption index is the highest for any one practice, in all the villages, followed by that of three practices in all the villages except Jorokani where the index of two practices is next to one practice. The adoption of all the four practices is the least. In Beguniapada none of the farmers had adopted all the four.

*Scientists, Indian Agriculture Statistics Research Institute, New Delhi

Table

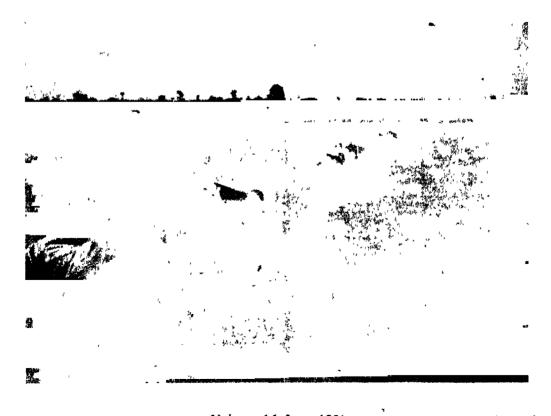
Indices of adoption

Package of practices	Ghorodia Adoption	Area	Sisuapada adoption	Area	Beguniapada adoption	Area	Jorokani adoption	Area	Over all adoption	Area
One . . .	27.8	30.3	25.0	28.3	20.0	42.9	31.0	35.6	27.5	32.4
Two . . .	18.5	25.8	10.0	20 7	10.0	19.7	20.7	8.8	16.8	19.4
Three . . .	20.4	11.6	15.0	0 7	30.0	5.6	6.9	12.3	16.8	9.7
Four . . .	14.8	5.0	15.0	2 0	0.0	0.0	3.5	1.6	10.6	3.2
Total . . .	81.5	27.7	65.0	51 7	60.0	68.2	62.1	59.3	71.7	64.7

The total area index for at least one practice is also the highest in Ghorodia (72.7) and in other villages it varies from 51.7 to 68.2. The area index is the highest in the case of single practice in all the villages where adoption index was also the highest. It is lowest in the case of four practice package in Ghorodia, Beguniapada and Jorokani where adoption index was also the lowest. In Ghorodia, Beguniapada and Sisuapada the adoption index was higher in three practice package than two practices but the area index revealed an opposite trend indicating thereby that the two practice package was being more intensively adopted by the farmers compared to the three practice package. This shows that efforts are needed not only in persuading farmers to adopt packages of more practices but also in their application in larger areas

The total index of adoption increases with the increase in holding size. Between different package of practices, it is found that the index is the highest in one practice in marginal and medium holding size groups. The adoption index decreases as the practices in a package increases in case of marginal farms while in medium holdings it remains the same for all other packages of practices. In large holdings the adoption index of four practice package is the highest (58.3) followed by one or two practice package (16.7). So the adoption level depends upon the holding size group. Further, in large holding size group, the adoption of a complete package of practice is more prevalent compared to the other packages.

Except in small holdings, the area index of at least one practice also increases with the increase in holding size In medium farms where the adoption index was the same in two or more than two practice package, the intensity of adoption decreases as the practices in a package increases. Similarly in small farms the adoption index was the highest in three practice package. Likewise in large holdings the

Transplanting in Progress

intensity of adoption of a complete package of practices is the least. Thus it can be concluded that though in many cases there is sufficient evidence of adoption of two or more than two practices, the intensity of adoption is higher in package of less practices comparatively.

Cultivation of HYV Seeds

The growing of HYV seeds was not adequate. Only 49 per cent of the farmers cultivated the HYV seeds in only 9.1 per cent of the total area under rice crop during kharif season. Uncertainty of performance of HYV seeds was the main constraint for 40 per cent of the farms. About 20 per cent of the farmers reported costly inputs as the main reason as also combined flood and waterlogging conditions and incidence of pests and diseases with it. About 30 per cent reported either too much flood or lack of resources as their main constraint while 10 per cent reported susceptibility of HYV seeds to pests and diseases as the main reason for partial|non adoption.

Application of Chemical Fertilizers

The main limiting factors for low level of application of chemical fertilizers were unfavourable climatic conditions (55 per cent), high cost of fertilisers (20 per cent) and lack of resources (20 per cent) About 3 per cent farmers were of the opinion that fertilizer application was not necessary as they were applying high doses of organic manures.

The incidence of pests and diseases was reported by 91 per cent of the farmers but only 25 per cent took preventive measures. The main reasons were ignorance in respect of suitable measures and their ineffectiveness due to unfavourable weather conditions. Few farmers were of the opinion that plant protection measures, if taken, will go waste in view of the fact that the area was endemic and majority of the neighbouring farmers were not adopting any measures. The need for a cooperative effort in this direction was felt by some of the farmers. High cost of insecticides and financial difficulties in general were also other reasons given by some farmers.

Use of Improved Implements

Only 32 per cent of the farmers used iron plough for cultivation. Among others, about 30 per cent of the farmers were not convinced about the superiority of iron plough over their traditional wooden plough in increasing yields. About 25 per cent reported lack of resources. Fragmentation of land holdings in the area is also considered a constraint since the use of improved implements on these tiny plots was not so much useful and economical.

There is a need for evolving some new high yielding variety seeds to meet the local needs and ensure good harvest. Institutional efforts are needed in the provision of drainage and optimal utilisation of irrigation water in the area. Surveillance organisations need to be activised in such areas where pests and diseases are important problems and some sort of crop insurance to be introduced to ensure the farmers with some minimum returns. Such measures could help a great deal in persuading the farmers to adopt the modern technology on their farms □

Price Stabilisation - Some Policy Measures

R. K. Parashar*

THE all-commodities price index in the country having touched the peak at 231.4 on 1st March, 1980, came down by 0.95 per cent on 5th April, 1980 when it stood at 229.2. It began to climb again and reached 237 1 on 10th May 1980. At that level it was 19.5 per cent higher on point-to-point basis. It, however, hides more than it reveals for as compared to the pre-1979 budget price index level of 184.6 for February, 1979, it was higher by 28.6 per cent on 10th May, 1980. The country, indeed, continues to wallow in a very high state of inflation notwithstanding the recent short break in its simmering rate of rise.

Several factors have contributed to this steep rise in prices. The staggering deficit component (which has finally worked out to Rs. 2700 crore) in the 1979 budget, wide-spread drought during that year affecting well over half the total number of districts in the country leading to a shortfall of about 12 million tonnes in foodgrains production or about six per cent fall in agricultural production, the sharp drop in the production in the industrial sector, hike in administered prices, especially of industrial commodities, the rise in the import bill especially on account of crude oil accounting for nearly three-quarters of our export earnings, etc., have been some of the contributing factors responsible for the steep rise in prices.

The prognosis seems to be disturbing. Even the annual report of the Reserve Bank of India for 1978-79 has taken a dim view of the Indian economy and forecast a grim future for it. Economic inequality, caused by the forces of inflation, continues to increase especially in the case of fixed income group in the urban sector of the economy. The sharp drop in the production in the industrial sector is accelerating. The energy crunch is now building up. There

*Deputy Adviser, Planning Commission. The views expressed herein are author's own.

have already been huge power cuts in States, such as, Maharashtra, Karnataka, Orissa, Bihar, Uttar Pradesh, West Bengal and even in Punjab, Haryana, Himachal Pradesh and Tamil Nadu not to mention Madhya Pradesh, Rajasthan, Gujarat, Andhra Pradesh and Jammu and Kashmir. The foreign trade prospects, too, look very sombre.

In this backdrop, there is need for a realistic assessment of the economic portents. Inflation has always been found to be a socially expensive and economically wasteful means of increasing investment. The Indian experience shows that rising prices discourage economic development and high rate of inflation inhibits and thwarts economic growth in terms of physical as well as financial investment. In fact, sharply rising prices and high rate of inflation function as anti-growth factors in economic development. It is, therefore, necessary to take all measures, monetary as well as others, to contain and stabilise prices.

Price stabilisation is essentially a function of demand and supply management. Demand can be met through (i) increased production of commodities and services in short supply; (ii) increased production of their substitutes; (iii) increased imports to fill the gap between demand and supply; (iv) regulating the exports of goods in short-supply, (v) regulating the demand of goods in short-supply through rationing; and (v) as a last resort, taking recourse to measures which would curb effective demand, leading to its postponment, and thereby inducing a contrived equilibrium between demand and supply. We have not here attempted to give a comprehensive framework of measure to contain and stablise all prices. Instead we have identified a few selected areas of action and possibly of durable results. Our suggestions are as under :—

(i) Incentive prices (as against procurement/support prices) for key agricultural commodities.

The Agricultural Prices Commission (APC), which is a statutory body of the Government of India, recommends procurement prices annually in the case of commodities, such as, wheat and paddy; minimum support price for commercial crops such as cotton and jute; and minimum support prices as and when necessary in the case of commodities, such as, potatoes and onions. In arriving at the recommended prices, the APC takes into account a number of factors, such as, cost of cultivation of the commodity, a certain element of profit to the grower, demand and supply position within and without the country, the demand and supply position of the competing and substitute commodities, carryover stocks, etc., etc. A fair margin of profit to farmers on the cultivation of these commodities is, however, one of the crucial determinants kept in view by the APC in arriving at the recommended procurement prices.

Besides the procurement/support prices, there is conceptually another price called incentive price. These two sets of prices have different objectives. While the core objective of the support prices is to provide price support to farmers in the event of the prices of the support commodities falling below the floor level, i.e., below the cost of their production, and leading to distress sales (because of, inter alia, supply out-stripping the demand especially at the harvest time), the role of the incentive price should be to provide the necessary inducement, in the form of higher profit margin, to farmers to that they may bring more area under the desired crop, and/or go in for its more input-intensive cultivation, with a view to increasing its total production. Thus, while the support price is essentially of the nature of floor price, the incentive price should be of the nature of premium price.

Studies after studies have brought out that the Indian farmer is responsive to the price factor; that he varies his crop-plan, i e , the area sown by him under different crops, with the variation in farm harvest prices of these crops. However, may be for reasons of its restricted terms of reference or others best known to it, the APC does not seem to have felt it necessary to advice the Government to make use of the incentive price tool to influence the cropping pattern in the country in order to bring about a more balanced production of agricultural commodities.

We are of the view that in the case of established crops like wheat and paddy, in whose cases yield and production breakthroughs have been obtained, Government may announce support prices only—support price as defined and understood here. In the case of commodities in which the country is in short supply, e g , oilseeds (edible oils), pulses, etc., it should instead announce incentive prices and not minimum support prices as has been the practice so far. The absence of government backed incentive prices, in our opinion, has been a crucial factor responsible for the country not making a breakthrough in its production of oilseeds (edible oils) and pulses. As a result farmers have been, guided by the comparative cost advantage, putting generally marginal lands—lands of poor productivity and mostly un-irrigated—under those crops.

The incentive margin necessary to bring about a basic change in the crop planning and production in the country, can be worked out. The incentive price should assure a farmer higher return per hectare of land than he would get if he were to put it under an established alternative crop. The argument that it would lead to a general escalation in the prices of other agricultural commodities is based, at best, on a misguided fear. In the scheme of things envisaged herein, the Government should either not announce procurement prices for major cereals like wheat, paddy and millets but keep its administrative machinery in good gear so that it can enter the market if the prices of these cereals fall below the floor prices (as understood by us) so that panic and distress sales do not take place; or, alternatively, it can act boldly and announce floor prices (i.e., support prices) which will

be Rs. 5 to Rs. 15 per quintal less than the existing procurement prices (announced on the basis of the recommendations made by the APC which include a "fair" margin of profit to farmers) and allow the market forces to find their own equilibrium but enter the market to give support to farmers if the market prices tend to come down below the floor prices announced by it. If this is done, there is no reason why the prices of all other agricultural commodities will burgeon because of the announcement of incentive prices for one or two agricultural commodities suggested by us.

In order to give teeth to incentive prices and generate the climate of confidence in them, these should be announced as effective for three agricultural years at a stretch, i.e these should be fixed on a triennial basis Then only, these prices would be able to induce quantitat ve as well as qualitative change in cropping pattern and make it responsive to variation in the regulated prices Also, this measure will in one sweep ensure a continuity of policy and help stability prices over a reasonable span of time and help investments in the farm sector.

In order to enable the APC to have direct access to the cost of cultivation data (and to remove the dyarchy that exists at present in this matter), the Cost of Cultivation Unit at present located in the Directorte of Economics and Statistics of the Union Department of Agriculture should be transferred and attached to the APC This would help remove the time-lag in making the cost of cultivation data available by the Directorate to the Commission and the exercising of any discretion on the part of the former in making only selective data available to the latter Also, this will make the Commission more directly responsible about the authenticity and quality of the cost of cultivation data which is the most important element in the working out of the support/procurement prices recommended by it

In advising to the Government on support/incentive prices, the Commission should take into account not merely the prices of agricultural goods but also of industrial commodities, especially those which have a bearing either on the cost of production of agricultural goods or the cost of living of the farmers, and their inter-action. With the recent revision in the terms of reference of the Commission, it should now be possible for it to do so. The sweep of the Commission's view should be sensitive to the health and welfare of the economy as a whole instead of being restricted to the farm sector as at present.

In order to enable the APC to discharge its functions effectively, it should be composed of an inter-disciplinary team. The Commission should, therefore, be strengthened to include in its composition, and in its senior level staff, experts from the field of commerce, industry, transport, management, monetary economics, statistics and the like. Also, in order to ensure that this statutory body does not get bogged down in the grooves of staid thinking its members, including its Chairman, should be appointed strictly on a tenure basis. However, in order to ensure continuity in its functioning, the post of its member-Secretary may alone be made a cadre post.

As a result of these measures, we envisage, inter alia, the emergence of a dynamic cropping pattern responsive to price changes leading the country to another quantum jump in yield and production of the desired crops of the Green Revolution genre of the sixties. The huge expenditure of over Rs. 800 crore in foreign exchange, now being incurred every year in the import of edible oils, for example, would cease and soon become as much a thing of the past as the imports of wheat and rice made by this country year after year not many years ago. As an end result we expect these measures to impart stability not only to the prices of agricultural commodities but also to the general price level in the country

(ii) Supply of Commodities of Superior Quality Through Ration Shops

One of the criticisms of agricultural commodities made available through ration shops is about their quality-inferior quality. As a result quite a segment of ration card holders obtain their requirements of these commodities from open market. And that means at higher price. Thereby these people give avoidable support to price rise in these commodities With a view to meeting this to open market diverted demand, it is suggested that in all ration shops, especially those located in big cities and in white-collar colonies, commodities of superior quality (superior with capital 'S') should be made available on shelf at prices competitive with those of the open market. To ensure the quality and purity of these commodities, they may be supplied in packed and sealed polythene bags of convenient weight like of one kilogram packing for sugar, pulses, besan, etc, and of 10 kilogram packing for wheat, rice, wheat flour, etc. Also, some governmental agency, like the Food Corporation of India (or a new agency created for this purpose), should be made responsible for the supply and for ensuring the quality of these commodities. Also voluntary local consumers supervisory bodies could be set up in different areas of cities and big towns to see that mal practices, such as, the diversion of superior quality ration goods to open market by some unscrupulous ration depot holders, do not take place

The quality goods, like the normal ration goods, should not be subsidised at all. In fact, the profit made on their sale, in small or large measure, may be utilised to off-set, to whatever extent possible, the cost of subsidy now being incurred by the government in making them available through ration shops This measure would siphon off a part of the open market demand and would, therefore, help contain the rise in the prices of goods made available through ration shops on the one hand and meet a part of the cost of subsidy being incurred by the Government on these goods at present on the other. In fact, it is a quiet and un-obstructive way of passing on a part of the cost of poor man's expenditure on food to others who would in the name of quality and purity, afford to do so.

(iii) **Dual Pricing**

In a poor country and under conditions of scarcity, dual pricing is, in fact, the ideal answer for safeguarding the interests of the vulnerable section of the popu-

ation, stablising prices and at the same time letting supply and demand find an acceptable equilibrium as against the equilibrium reached as a result of the cold and merciless free play of open market forces. Dual pricing also helps contain, within bearable bounds, the dis-satisfaction of the populace with scarcity conditions. In other words, under conditions of scarcity dual pricing policy is a vital under-pinning necessary for the safety of democracy itself. The dual pricing policy should be followed in the case of all items of daily consumption whether agricultural commodities like wheat, paddy and pulses, factory produced goods like sugar, soap, tooth-paste and edible oils or commodities like petrol and diesel. In fact, dual pricing policy and supply of commodities of superior quality through ration shops are related measures.

(i) More Wholesale Mandies for Vegetables and Fruits

In the case of commodities of perishable nature, like vegetables and fruit, one simple and yet effective way of stabilising their prices and keeping them under control, is to reduce the imperfection of the market by introducing greater degree of competition and, therefore, free flow of their supplies. Whenever and whatever temporary the difference between their wholesale price in the main mandi and retail price within a city tend to diverge out of proportions. This is mainly because a handful of dealers in a wholesale mandi control the entire market in these commodities. In order to overcome this cartel-like situation, it is very necessary that the wholesale trade in vegetables and fruit is 'de-centralised'. An effective way of doing it would be to have two or three or even more wholesale mandies in every big city. Further, in the allotment of shops/business facilities in the new wholesale mandies, it should be ensured that business premises are not alloted to those who already have such premises/facilities in the existing wholesale mandi, the guiding criterion being to have as large a number of independent wholesalers in the vegetables and fruit trade as possible in order to break the hold of a few traders/families in this trade and introduce a degree of open competition in it. As a further step, a large number of vegetable markets, like that of Paharganj and Daryaganj vegetable markets in Delhi, should be established within the bounds of all big cities. There should be one vegetable market, strategically located, for every one lakh of population. Once a number of whole-sale mandies and vegetable markets come into existence in every city, imperfect competition in, or the manipulation of, the prices of vegetables and fruit by unscrupulous trade (as is the situation at present), leading to distortion in retail prices, especially during brief periods of short supply, would be checked and minimised.

(v) Ban on the Exports of Vegetables and Fruits

At present the export of fresh vegetables, other than onions and potatoes, is allowed on merit through Central and State Government agencies. While that of onions is canalised through the NAFED the exports of potatoes and fresh fruit is under O.G.L. (Open General Licence). *It is a fact of market place that, other things being the same, the price of a commodity tends to firm up if its export is allowed and ease if its export is banned.* Vegetables are a substitute for pulses to a not inconsiderable extent, and vice versa, especially in view of their (pulses) high prices. Exports of vegetables lead to scarcity conditions, real or contrived, in their availability for domestic consumption and, therefore, to a rise in their prices. This pushes them beyond the reach of the poor. As a result, there is a further rise in the demand for pulses, already in short supply, and, therefore, a further rise in their prices leading to the emergence of a vicious circle. Therefore, any desire to earn foreign exchange through the exports of vegetables is conomically unwarranted, socially unethical and politically undesirable. The guiding criterion should be that the exports of vegetables, including potatoes and onions, is not, never, at the cost of the domestic demand for them. If this principle is followed, it would help in keeping down the aggregate demand for pulses and, hence, their prices. This would also help in the stabilisation of the prices of vegetables and fruit.

The exports of fruit, especially those varieties of bananas, mangoes and apples which have over a period of years become the poor man's fruit and for which there is unmet internal demand, should also not be allowed. In this connection the warning given by the Reserve Bank of India in its latest annual report that it will be necessary to regulate sporadic exports of mass consumer goods wherever they are not backed by long-term programmes of enlarged production, is very pertinent.

Sporadic exports of vegetables and fruit, are, even otherwise, difficult to undertake. Export markets in these commodities need to be constantly nurtured through continuous exports, promotional efforts, etc., for generating demand for their specific varieties. Therefore, undertaking exports of a fruit, when there is glut and stopping it when the internal availability falls short of the domestic demand for it, is not a very practical and profitable proposition. Till such time the country is able to generate regular and stable surpluses in the production of the export varieties of fruit, onions and potatoes, the effective way of tackling the glut in their production in a particular year would be for a central agency, like the NAFED, to enter the market to give price support and utilise the mopped up surpluses for manufacturing products, such as, canned fruits, jams, marmalades, fruit juices, potato chips and wafers, onion concentrates, pickles, etc., for marketing in selected metropolitan cities and through government and armed forces canteens, institutional buyers, etc. In fact, the NAFED, which has recently entered in this field, seems to be doing reasonably well if the sales of its products through Super Bazar counters can be taken as an indicator.

UNITED WE STAND

DIVIDED WE FALL

BOOKS

Indian Scientists

Some Eminent Indian Scientists by Jagjit Singh, Publications Division, Price Rs. 15.

IT is hard to question the bonafides of this volume in the context of national publicity and information relevant to the scientists included. But the ends of this honest purpose would have been justly met if the compilation were captioned as Eminent Indian Scientists to embrace many of them, with real eminence, instead of just some of them (to suit the discrete choice and endeavour of the author). There is no denying that the author had certain reservations on the subject. But the publisher's production and editorial outfit could ill-afford to take it lying down all the way from the first to the third edition. Other contributors could be depended upon to make the volume concise enough at least for the lay reader for whom it was intended. The alphabetical order in which the scientists were placed could not extend beyond the Second edition. It could be a prudent preposition if the placement was chronological with clear susceptibility of subsequent inclusions.

The readability of the contents speaks of peculiarly lucid style of expression wedded to the proud and admirable efforts of a dedicated stalwart in the field of scientific knowledge extending over to his intimate understanding of contributions to science and its advancement by brilliant sons of the soil who were mostly born in colonial India but lived up to the expectations and pride of free India as also to the envy of their western contemporaries.

Personal bio-data followed by precisely depicted acumen and achievements of the various scientists, selected at random in the realm of mathematics and certain allied sciences is the mainstay of this collection of articles It is obviously so handy for a casual and informative study.

The book has a soberly attractive and stout get up, clear printing with centre-spreads of black and white snaps of rare profiles of science luminaries. The price is of course so paltry for so good a book and the reader with genuine interest will find it quite absorbing.

R. Prakash

Social Status of Women

Status of Women : Literacy and Employment : by Asok Mtira, Allied Publishers Pvt. Ltd., New Delhi 1979, pages 74, Rs. 20 (under the ICSSR Programme of Women Status—II).

THE present study is an endeavour of Indian Council of Social Science Research (ICSSR)—JNU Research Project based on the analysis and utilisation of census and related data from 1872 to 1971 for the study of the long-term trends of literacy and employment.

Part I is an extensive study of the female literacy rates. The illustrations are mainly in the tabular form and one gets a clear picture of the trends in favour of literacy since 1951. While examining the rural female literacy rates, the author has pointed out various cultural, economic, sociological, and anthropological factors coming in the way of female literacy. He has further observed that the compulsion to marry the girls while still young so that they continue to be under economic and social subjugation for the rest of their lives also acts as a contributory factor to the lower female literacy rates. It may be generally difficult to agree with all the statements made by the author although he has made them on the basis of the available data. Some of the statements relating to rural India appear to be far from belief but these are based on facts.

Part II discusses the employment pattern of the female in the twenty large cities of India from 1901 to 1971. References of works done by different authors in this regard have also been cited in this part.

The author deserves to be congratulated for his thorough and comprehensive study of one of the important segments of the society by taking the two important economic variables.

B.N. Sahay

Cross Roads of Economic Theory

The Structure of the Keynesian Revolution by Dr. Ghanshyam Mehta, Allied Publishers Pvt. Ltd., Bombay, 1978, pages vii+200, Rs. 45.

THE fascinating theme of this book under review is about the continuing debate on the thesis advanced by the incrementalist school who question the nature of the revolution in the "General theory" of Keynes and yet are not dialecticians. Besides, their respective approaches to social sciences and natural sciences differed A grasp of the nuances could be had only through a minute investigation based on historiography and the employment of tools such as the one embodied in this thought-provoking book.

The current interest on the entire corpus of Keynesian economics has led the author to probe into the structure of his thought in relation to that of his predecessors in the field. as well as contemporaries of the Great Depression. The methodology employed for the purpose is the provocative thesis of Thomas Kuhn on *The Structure of Scientific Revolutions* (Chicago, 1970).

The present study divided into seven chapters starts with an opening statement of Kuhn's historiographical framework and puts 'the classical normal science' in its proper setting. The author identifies the crisis and ferments through a series of writers of different interests and perceptions as they had reacted and speculated about them. Yet it is recognised that the exercises moved towards a cognitive consonance until "Keynesianism resolved the dissonance by changing the theory in order to make it consistent with the cognition of facts".

The treatment of the theories of J. M. Keynes that follows in chapter five rediscovers the value of his Treatise that was overshadowed by the more popular General theory. To clinch this vein of analysis, the author further elaborates his views in the next chapter where Keynes' Treatise and the ferment in monetary theory (1930-1933) has received special treatment. Here the suspected open-ended character of this work notwithstanding, it is reckoned as having been the best work of J. M Keynes and not the general theory which "merely spelled out the inchoate vision of the earlier book"

This excellent study is uncommonly original, scholarly and deserves to be read by all mature students of the economics discipline who have outlived their mental shackles and professional narrowness of outlook.

B.N. Nair

Demography

Studies in Demography : by S. C. Shrivastava ; Jai Prakashnath and Co. Meerut (U.P.) pp. 608. Price Rs. 30.

THE author has brought together various aspects of the vital statistics in different regions. Theories of population's growth, migration and the adverse effects of unchecked growth of population on the living standards of people are adequately dealt with. But, apart from chronicling the previous studies in the field, it is unfortunate that the author fails to bring in sharp focus any definite bearing of thees studies on the future status of India. For instance, he could have given some original thinking on the effect of rapid urbanisation on the ecology of India; how large-scale migration of people from rural to urban and semi-urban areas in search of livelihood do affect the growth of agriculture; how the cramped conditions of life in urban areas affect the population both in its growth and its health and how this alone will have many side-effects on the country's economy

The book fails to bring out any specific aim or unfold any new thinking on the unlimited dimensions of demography.

E.P.R.

Seventh Lok Sabha

Fundamental Issues for the Seventh Lok Sabha By Dr. R. S. Arora; Pages 173; Price Rs. 65

THE book under review is an attempt to invite attention of the Seventh Lok Sabha to some of the pressing and outstanding political, legal, constitutional, economic, social and foreign policy issues which need to be examined systematically by the Indian Parliament. India's Parliamentary system evolved by the founding fathers in pursuit of an egalitarian society, has been under great strain for about a decade now. The last three Lok Sabhas did not function to their normal period—the 4th had to be dissolved prematurely in December, 1970; the 5th's term had to be extended during the Emergency and the 6th could scarcely survive for two and a half years because it could no longer provide a viable government.

The present Lok Sabha will have to make a special effort to meet the urges and expectations of the nation through democratic means and to regain the ground lost because of the ineffective performance of the 6th Lok Sabha. The man in the street is interested in a leadership which promises a square deal and delivers the goods, and he lends his support till the regime keeps its promise.

The author has systematically examined some basic issues. The first issue before the Lok Sabha should be to correct the political and constitutional inadequacies which, if not taken care of immediately, may threaten the parliamentary system itself. The dangers of political instability in the Centre has been causing serious concern. The fall of the Janata was as dramatic as the rise of the Janata in early 1977. The Janata had emerged on the Indian political scene defying the basic 'grammar of politics'. It was interesting to read that soon after taking the oath of truly following the teachings of Mahatma Gandhi at Rajghat, the Janata leaders drove straight to the Gandhi Peace Foundation to quarrel about the leadership issue of the Janata Parliamentary Party.

Never before in the history of mankind have so many millions been so conscious of their rights that they changed the government which did not deliver the goods as per their promises.

The Seventh Lok Sabha has to face the challenge and to evolve viable solutions of various complicated political and constitutional problems.

The author has very ably attempted to identify serious problems which merit special attention of the Parliament. Industrial policy for the country is another such big problem. The mixed economy policy has achieved mixed results. The country expects a policy which would strengthen the two ends of the industrial spectrum—of large scale enterprise to provide the country's infra-structure to generate exports and to build a minimum of economic and military self-reliance; and of the cottage sector to disperse income and generate productive employment opportunities as widely as possible.

The author feels and rightly so that the accomplishment of national aims would require a fresh look at the rason d'etre of India's policy of non-alignment, of which she is the founder member.

The agenda for the Seventh Lok Sabha appears to be of historic significance. Its capabilities to meet the inherent challenge would not only determine its own viability but also that of the Indian democratic system

The book is a source of knowledge as far as the points raised by the author are concerned. For example he gives a detailed account of the reasons of Congress defeat in the northern States of the country in 1977 and the near political stability in the South.

The Lok Sabha being the heart and soul of the Indian Parliamentary democracy, its health reflects the soundness or otherwise of the Indian Parliamentary system itself.

The book under review is a must, not only for every Parliamentarian in the country, but for political pundits and scholars and students of politics and political economy. The author be thanked for giving timely warning to the people concerned with the uplift of the man in the street.

B.R. Kharbanda

Local Self Government

Golden Jubilee, Commemoration Volume : *All India Institute of Local Self Government, Bombay*, 1979, *Pages* 423, *Price Rs.* 101:

THE book under review has several aspects such as what is the structure of municipal system in some western countries, what direction our great leaders have tried or wanted to lay down for our municipal bodies, how today's municipalities are working and what new authorities are coming up and trying to do, art of ancient planning, slums, role of social scientists, population growth problems, and so on.

The volume contains excellent reference material on various aspects and sets one thinking as to how much is to be done before us if we are to improve the working of our present bodies to suit the present needs Some examples like what Gandhiji had said about roads in cities and cleanliness of them, what Nehru said about prositution in cities or how Nariman used youth power and his legal expertise for city's benefits set us thinking on various such problems and their complex dimensions. It is surprising to note that our leaders have not neglected local bodies, but the constitution has almost bypassed them and it is necessary that a well thought out policy spelling out the respective spheres or activities of the State and the Local bodies.

The volume can create good awareness of the present situation, problems and prospects of municipal working and improvement in it and should be kept as a reference manual.

H. D. Kopardekar

Space Research Book in Urdu

A popular science book in Urdu on Indian Space Research was released by the Prime Minister Smt Indira Gandhi in New Delhi recently Originally the book entitled "India in Space" written in English by Shri Mohan Sundara Rajan has been translated into Urdu by Prof Ikram Ahmed of Jamia Millia Islami and published by the Publications Division of the Ministry of Information & Broadcasting

It was at the suggestion of the late President Shri Fakhruddin Ali Ahmed that the book was taken up for translation into different Indian languages including Urdu Smt Indira Gandhi presented the first copy of the Urdu Book to Begum Abida Ahmed.

Speaking on the occasion the Prime Minister, Smt Gandhi said even though we live in an age of science it is necessary to understood its role in our life

Referring to the role of science in India, she said, being a peace-loving nation, we would use science only for peaceful and constructive purposes, not in competition with but in cooperation with other nations.

For this purpose, we must make all efforts to make our youth aware of its potential. Books in Indian languages on science would play an important role in this task

About the role of Urdu, she said that it occupied an honourable place among our languages Though efforts have been made to promote Urdu, much remains to be done She said efforts will be made to ensure that all Indian languages flourish.

Thanking the Prime Minister for her gesture, Begum Abida Ahmed commended the effort and hoped that both Urdu and science would continue to enjoy all encouragement

Earlier, requesting the Prime Minister to release the book, the Minister for Information and Broadcasting, Shri Vasant Sathe recalled the ideal of Jawaharlal Nehru to a scientific temper among our people and said the popular science book is a contribution towards realising that ideal □

Novel Experiment in Foresty

P.S Mahajan*

A bold and first ever attempt at raising a teak seed orchard in Maharashtra was done at Mohaghata nursery in Bhandara district in 1974.

Allapalli Forest in Maharashtra is rich in sky-rising teak trees. The teak is of the best quality next only to the Burma teak. The forest department tried, successfully, to introduce this variety of teak in the Mohaghata nursery by evolving a new technique called "Bud grafting". In the process auxillary ends from the flowering branches of mother trees (called p... trees) selected from the Allapalli Forest are grafted ...al variety of one-year-old teak stumps raised in nursery, by removing exactly the same size portion from the stump at collar-region. They are properly tied with a string and poly this strip. The grafted stumps thus obtained are either planted in polybag or in earthen pots and watered regularly. The graft establishes a live union with the stump in about a week and the ...routs to give a ...ular shoot in a month. This ...g is done generally in September/October or .../May. The earthen pots and polybags, carrying ... valuable treasure, are kept in partial shade and watered twice a day. Doses of fertilisers and insecticides were also applied. After one week polybags and earthern pots were carefully removed.

The total area of Mohaghata teak nursery is 797 hectares and the population of the plants is 1948.

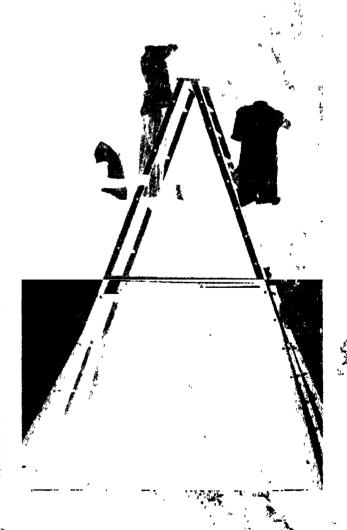
The first plant started flowering in 1975. In the year 1976, another 56 plants flowered and the number of flowering trees went on increasing.

The first tree, which flowered in 1975, gave 19 kg of seed. 68,836 kg of seed was collected from the 200 trees flowered in the year 1978. However, the seed can be put into use from the tenth year of the plant. Deducting the casualities, the population of living plants is 1460. The plant has an average height of 50.4 metres and average girth of 25 cm. In 1976, two more hectares of Mohaghata nursery were again covered with 240 grafted plants. In the year 1977, another 1664 bud grafts were added to it.

*District Information Officer, Bhandara.

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and Published by the Director, Publications Division, Patiala House, New Delhi-110001.

PROTECTING THE ENVIRONMENT

STEP BY STEP

India's Foreign Trade during 1979-80

INDIA'S aggregate exports including re-exports for the year 1979-80 have been provisionally placed at Rs. 5998.64 crores, as compared to the corresponding provisional figure of Rs. 5543.67 crores for the preceding year 1978-79, registering a rise of 8.21 per cent.

India's imports, on the other hand, have been provisionally placed at Rs. 8231.32 crores during 1979-80 as compared to the provisional figure of Rs. 6606.27 crores in 1978-79, recording an increase of 24.6 per cent.

The trade gap during 1979-80 have, therefore, been provisionally placed at Rs. 2232.68 crores

Indian Firm Bags Contract in Syria

HANGAL Paper Consultants, a New Delhi based firm, has been awarded a contract worth Rs. 70 million for complete management of a large size modern paper mill with an annual production capacity of 7,50,000 tonnes at Deir Ez Zor, Syria. The Indian firm will provided 96 experts at various levels for a period of three years to run the paper mill.

The paper mill has been recently set up by an Austro-Italian consortium.

Export Orders Executed

PUBLIC sector undertakings under the Department Heavy Industry executed export orders worth Rs. 229 crore during 1979-80. Export orders received by these undertakings during the year amounted to Rs. 146 crore. These included orders for supply of power generating and transmission equipment by Bharat Heavy Electricals Limited to Malaysia, Thailand, Saudi Arabia and Ghana; equipments for steel plant and aluminium plant by Heavy Engineering Corporation Limited to Egypt; structural equipment for dam by Triveni Structurals Limited to Thailand; railway coaches by Jessop & Company Limited to Bangladesh, and construction of building complex in Iraq by Engineering Projects (India) Limited. The total outstanding export orders stood at Rs. 881 crore at the end of March, 1980, compared to Rs. 869 crore at the end of March, 1979.

ITDC wins International Award

INDIA Tourism Development Corporation (ITDC won the 1980-International Award for Touri and Hotel Industry. The award, a bronze and marb trophy honours "firms of every industrial branch ou standing in the tourist and hotel field". The awa was created by an international tourist magazine OR VERDE (Green gold) one of a dozen or so publ cations of a reputed publishing house in Madr (Spain) known as Editorial Office.

ITDC enjoys a unique place in the tourism wor for its range of services. A public sector undertakin ITDC has developed tourism infrastructure and open up new tourist destinations, like Kovalam, Khajurah Bhubaneshwar, Kaziranga, Sasangir, and so on.

The Corporation runs the country's largest hot chain now called the Ashok Group, the largest touri transport fleet, duty free shops, and sound and lig shows, in addition to providing tourism publici services.

The Corporation has earned a net profit of ov Rs. 1 crore and foreign exchange worth Rs. 10 cro in 1979-80.

Exports From BHEL Bhopal

BHARAT Heavy Electricals Ltd, Bhopal export equipment worth Rs. six crore to nine countri during 1979-80.

The major items of equipment exported included : mw, hydrogenerators for Ohau, New Zealand, 7,000 k synchronous generators for Saudi Arabia, power tran formers for Tanzania and Saudi Arabia, water turbi assemblies for Thailand and switchgear for Liby Saudi Arabia and Tanzania. The BHEL secured t first combined order for 22 hydroturbine and gener tors from Tenompangi project in Malayasia. During t year, BHEL commissioned the first 120 mw turbin generator thermal set at Tripoli west power station Libya, completing its turnkey contract.

Success through Self-Employment

GAURANGA Debnath aged about 27 years be long to the village Ranirgaon under Jiran Block of West Tripura district. After completing h college education, he tried his best for securing a j and failed. But he was not disheartened. He deci ed to do some business. But he had no capital. I started learning Tripura's popular bamboo craft, t finished products of which are popular not on in Tripura but also in other states. Within a ve short time, he got enough experience in this craft a started selling his finished products in his villa shop, about seven km. from Agartala. Soon his pr ducts became popular and sales increased. Then opened a shop in Agartala town also. As sales i creased more and more, he engaged some unemplo ed persons to assist him. This shop also prosper He opened yet another shop in the Silchar airport Assam.

Thus an unemployed person, became the propriet of three shops—one in his own village Ranirgaon, a other in Agartala town and the third one in the Silch airport. Now over 50 persons are engaged in his bar boo industry. Shri Debnath now earns over Rs. 2500 per month.

FPO, Agartal

YOJANA

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Protecting Our Environment

OF late, the educated sections among our people have become somewhat conscious of the environmental problems. But this knowledge has not yet seeped down to the masses, nor are effective steps being taken for preventing and counter-acting pollution of various kinds.

Untreated sewerage and industrial effluents with toxic elements are polluting the water resources in our urban areas. While a majority of our villagers do not have easy access to potable water, even those who have this facility pollute it through their unhygienic practices. Many diseases, some of them on epidomic scale, are directly and indirectly caused by the polluted water. Careless spraying of insecticides and pesticides poison the water, soil and air in our countryside, affecting the health of men as well as cattle. The devastating floods, droughts and landslides, which have increased in recent years, have brought home to the people the dangers of indiscrimate felling of trees. The deforestation in the various parts of the world is increasing the quantum or carbon dioxide in the atmosphere and thereatens to cause major climate changes. In our metropolitan cities and other industrial centres the factories are incessantly belching out smoke containing carbon, harmful chemicals and toxic metallic particles which affect the lungs and eyes of the people residing in those areas.

In order to protect our environment the mass media should carry out a sustained and systematic publicity campaign. The government and local bodies should take immediate steps for treating the sewerage and for compelling the industries to purify their affluents before they are discharged into the public waterways. Government should also increase the pace of providing protected water supply to the villages. These programmes will, of course, cost an enromous amount of money but human life and health are more precious than money. For preventing the indiscriminate felling of trees there should be a nation-wide movement on the mode of CHIPCO of Uttarakhand (UP) which should also add to its activities the planting of trees on a large scale. Despite the annual Vanmahotsav official action in afforestation has so far been very inadequate, and the country can be made green within a short time only if the youth take up this work with a missionary zeal. Meanwhile the statutory Boards which have already been set up at the Centre and in the States to control water pollution should work more actively and enforce the Water Act of 1974 with more vigour by prosecuting the factories, etc., which cause pollution. Last but not the least, we, as a developing nation, should not repeat the mistake of the developed nations in over-exploiting our natural resources in the name of economic development. □

TRENDS

6th Plan Framework in August

THE Planning Commission will prepare a "short document" indicating a framework for the Sixth Five Year Plan and it will be placed before a meeting of the National Development Council to be convened early in August this year for its consideration

Addressing the Forum of Financial Writers in New Delhi recently Dr. M. S. Swaminathan, Member, Planning Commission said "After that we can go ahead with ocnfidence to prepare a plan document". Stressing the necessary to step up and maintain food production within the country at high levels to ensure that foodgrain imports did not eat up the exchange reserves he said that the outlook here was not gloomy He expected the acreage under irrigated area to go up above the present 20 per cent. On employment generation, Dr. Swaminathan said that the task ahead was staggering since about 35 million more people would be joining the country's work force by 1985. The questions engaging the attention of the Planning Commission were how to integrate rural development and rural employment and make rural employment an instrument of accelerated economic growth rather than employment generation per se.

Replying to questions on the proposed annual growth rate of 5 per cent, Dr. Manmohan Singh, Member-Secretary of the Commission, said the rate was not an "over-ambitious or unrealistic working hypothesis. It is our mandate to see that we find ways and means to accelerate the rate".

On the balance of payments situation resulting from high oil prices, Dr. Manmohan Singh said there was no need to take an alarmist view. He, however, pointed out that the situation today was not the same as it was in late 1978 when oil prices started going up.

Zinc and Lead Production to be increased in 1980-81

HINDUSTAN Zince Limited in the public sector has planned to produce 66,000 tonnes of zinc and 14,000 tonnes of lead during 1980-81. This follows the corresponding increase in ore production and milling capacity from its mines.

With this production HZL will now be able to meet over 58 per cent of zinc and over 30 per cent of lead demand in the country.

The target of 66,000 tonnes of zinc for 1980-81 is about 44 per cent more than the actual production of 45,523 tonnes during 1979-80. Similarly the lead target of 14,000 tonnes for 1980-81 is about 22 per cent more than 1970-80 production of 11,431 tonnes.

Export of Entertainment Goods

A TASK FORCE has been set up by the Government of India, to review the present trend in exports of entertainment goods and suggest measures for stepping up exports of these items.

The 15-member task force is headed by Shri A. K Dutt, Information and Broadcasting Secretary. Entertainment goods such as cinematographic films, cassettes, radio tapes and gramophone records have high export potential and can earn substantial foreign exchange. The committee will identify major product areas with export potential, recommend export targets and draw a marketwise export strategy.

It will also recommend on matters relating to production and capacity constraints in the entertainment goods sector, as also to procedures, regulations and institutional arrangements that may be required for improving marketing of these products.

Champamati Irrigation Project in Assam

THE Planning Commission has approved the Champamati Irrigation Project in Assam at an estimated cost of Rs. 1532.15 lakhs. The project will irrigate annually a total area of 24,994 hectares, out of which 16,179 hectares will be under Kharif, 8,700 hectares under Rabi and 115 hectares under perennial crop.

The Champamati Irrigation Project envisages the construction of a barrage at Nagadalbari across the river Champamati, a tributary of Brahmaputra in Goalpore District of Assam. The left and right bank canals taking off from the barrage will irrigate land in Goalpore District of Assam

Edible Oils through Fair Price Shops

ABOUT 90,000 tonnes of imported edible oils would be made available through public distribution system in the four southern States during the coming five months. This marks a significant enhancement over the figure of about 30,000 tonnes of imported oil distributed in these States during the first six months of the current oil year (November, 1979—October, 1980).

The decision to enhance the quantity of imported edible oil through the public distribution system was taken in a recent meeting of the Food and Civil Supplies Secretaries of the southern States at Bangalore The meeting was convened by the Union Department of Civil Supplies.

Tree-Planting in Drought-Affected Areas

THE Union Ministry of Agriculture has invited the attention of State and Union Territories to the urgent need for planting trees on a massive scale in the drought-affected States.

The Prime Minister had recently stressed that all State Governments and Union Territory Administrations should launch planned campaigns for large-scale

plantation of trees in the drought-affected areas. The Prime Minister had also stressed that a widespread programme of social forestry should be taken up both under the Food for Work Programme and under other specific schemes so as to protect and improve the ecological system and the environment.

The Agriculture Ministry has suggested to the States that where in particular areas, there was no Food for Work Programme, tree plantation could be taken up under such projects as the Social Forestry Scheme and and Operation Soil Watch Scheme. It has been pointed out that all unutilised and barren strips of land, banks of rivers and streams, catchment areas, deforested valleys, mountain slopes, sides of National and State highways and traffic islands could be planted with fast-growing species of trees.

More Salt to North-Eastern States

AS a part of the Government of India's drive to make essential items available to the people of Assam and the other north-eastern States, 14,900 tonnes of salt have been moved to these States between May 1 and May 15, 1980. The total quantity of salt despatched this year upto May 15, 1980 is 64,100 tonnes. The Government had sent 49,200 tonnes of salt this year upto April 30.

Licences for Small Flour Mills

THE entrepreneurs of the roller flour milling plants up to a capacity of 30 tonnes per day will now have to obtain industrial licences to set up their plants. Owners of the existing industrial undertakings which were previously exempt from licensing but which would not be so exempt, shall not carry on business of such undertakings except under and in accordance with a licence issued in this behalf by the Central Government Such a licence is required to be obtained within six months.

Thoubal Multipurpose Project in Manipur

THE Planning Commission has approved the Thoubal Multipurpose Project in Manipur at an estimated cost of Rs. 47.25 crore. The Project will irrigate annually a total area of 33,400 hectares, out of which 18,219 hectares will be under Kharif, 9108 hectares under Rabi and 6073 hectares under hot weather crop.

The Thoubal Multipurpose Project is located on the river Thoubal near Village Pheyang, 35 km. from Imphal Town. The storage dam forms a reservoir to provide irrigation to 21,862 hectares. Water will be supplied from the reservoir at 45.46 million litres (10 million gallons) daily for Imphal Town. Power benefits from the Project based on irrigation releases would vary from a minimum of about 0.9 MW continuous to maximum of about 2 MW continuous.

12,000 More Fair Price Shops in Five Months

THE public distribution system all over the country has been strengthened during the past few months as a part of anti-inflationary strategy and for providing relief to drought-striken people. Between January, 1980 and May, 1980 total number of fair price shops in the country has increased by about 12,000 from 2.35 lakhs shops in January, 1980 to 2.47 lakhs shops in May, 1980.

At the same time, the enforcement machinery in the States have been activised in order to control hoarding and black-marketing in essential commodities.

The number of fair price shops have been steadily increasing month after month from January onwards. The increase in the number of fair price shops has been mostly in the drought affected States and in the rural areas. In fact, between March 1980 and May 1980 7,000 more fair price shops were opened in the rural areas only. Of the total number of 2.47 lakhs fair price shops at present as many as 1.94 lakh fair price shops are in the rural areas.

Indian Board for Wildlife Reconstituted

THE Indian Board for Wildlife has been reconstituted under the chairmanship of the Prime Minister, Smt. Indira Gandhi The Minister for Agriculture is the Vice-Chairman of the 42-Member Board.

Irrigation Potential To Be Doubled

THE irrigation potential in the country will be doubled during the next 20 years. The Government aim to achieve 110 million hectares irrigation potential by 2000 A.D. The present potential is 53 million hectares and every year 2.5 million hectares of additional irrigation potential are added which is unprecedented in the history of any country.

This was stated by Shri A. B. A. Ghani Khan Choudhury, Minister of Energy, Irrigation and Coal, while inaugurating the two-day 50th Session of the Central Board of Irrigation and Power in New Delhi recently.

Shri Choudhury also emphasised on the need for better water utilisation which had been rather neglected in the country so far. The deficiencies in the canal systems, he said, must be corrected by taking up a programme of modernisation of old irrigation systems.

Clearing Roads Of Traffic Congestion

TRAFFIC engineering cells are to be set up soon in all the States and Union Territories to tackle the problems of traffic congestion and road accidents. To begin with, such cells have been set up in Tamil Nadu, Andhra Pradesh, Assam and Haryana. Himachal Pradesh and Delhi will have these soon. In other States, the proposal is being actively pursued.

Besides engineers, the cells will have economists and statisticians for collection and analysis of data.

The cells will suggest remedial measures for reducing the number and severity of accidents in liaison with the traffic police, press, radio, and schools. They will also assist in the installation of traffic control devices as also help the highway planning units in the development of traffic forecast. □

Why The World Is Warming Up ?

K. S. Jayaraman*

ONE less well-known side effect of cutting down the tropical rain forest in the Silent Valley in Kerala would be to help heat up the earth—permanently. And no one quite knows what the climatic implications of that would be.

The critical factor is carbon dioxide (CO_2). Trees help mop up this gas from the air : one acre of tropical rain forest removes a hundred tons of CO_2 each year. So wiping out 1,000 acres of Silent Valley would mean that some 250,000 tons of atmospheric CO_2 would not be recycled.

It is this build up CO_2 in the atmosphere due to deforestation—and the burning of coal—that worries climatologists. The CO_2 layer allows the sun's rays to strike the earth's surface but, like the roof of a greenhouse, it traps the outgoing heat radiation, from the earth.

As a result, some meteorologists fear, the earth will warm up, leading to such adverse climate changes as the melting of polar ice, a five metre rise in sea level, the inundation of coastal areas and a disruption of food production.

These dire consequences to the world climate resulting from the 'greenhouse effect' are still being debated. But the World Meteorological Organization (WMO) is certain that of all human activities, the addition of CO_2 to the atmosphere will have the largest impact on climate.

Environment Programme

The United Nations Environment Programme (UNEP) which works closely with the WMO has this year rightly focussed world attention on the CO_2 controversy. In its 1980 State of the World Environment report the UNEP warns that "CO_2 induced effects on climate would not be detected before irreversible and undesirable climatic changes had begun" and has advised nations to devise strategies to reverse deforestation and curb the use of fossil fuels.

The CO_2 controversy is the result of man upsetting the delicate "carbon cycle". In nature carbon is stored in the oceans, the atmosphere, plants, soils rocks like limestone and fossil fuels. Any excess CO_2 entering the atmosphere is normally absorbed by the two "sinks" : the world's oceans and the biomass.

But the problem is that during the last century man has been releasing more CO_2 into the atmosphere than can be recycled and absorbed by the sinks. This release is continuing at an accelerated rate. The main sink for CO_2 in the longer run will be the oceans but it takes over 1000 years for the CO_2 in the air to enter the deep ocean waters. Therefore man-made CO_2 lingers in the atmosphere for many centuries.

As a result the atmoshere now contains more carbon dioxide than ever before. But deforestation is not the main culprit. The most serious source of CO_2 is the burning of coal.

It is impossible to burn coal without producing CO_2. One 1,000 MW coal-fired power plant emits 16 metric tons of CO_2 a minute. About 140 billion tons of CO_2 from coal-burning and from the limestone use to make cement have entered the atmosphere in the last 125 years.

Deforestation

Added to this is the CO_2 build up due to deforestation. Some 600 million hectares of tropical forests are estimated to have disappeared. The Food and Agricultural Organisation estimates an average loss of five to six million hectares a year over the past 25 years. In one decade the forested area in Nepal's hill zones decreased by 25 per cent. If the current trends continue, all accessible forests in Nepal would disappear in 15 years according to a Nepalese research group. In India 130 million tons of wood is being cut each year. A vast amount of carbon is stored in tropical forests and its release through deforstation and burning is estimated to have added 70 billion tons of CO_2 to the atmosphere. The U.S. biologist George Woodwell believes that deforstation may already rival fossil fuel burning as a source of atmospheric CO_2.

Today CO_2 constitutes about 330 parts per million (ppm) of the atmosphere, which is 14 per cent more than the concentration in pre-industrial times. And at the current rate of fossil fuel consumption, the CO_2 level will have doubled by 2020 AD, leading to an increase in global temperature of 1.5 to 3 degrees centrigrade. The second doubling would occur before 2100 AD, some meteorologists say, and it would produce a 5 to 6 degrees centrigrade warming.

The numbers may seem small but at the polar regions the rise in temperature would actually be several times the global average. Scientists say this could lead to the melting of polar ice, raising the sea level enough to submerge much of Florida (USA), the Netherlands, and the principal low-lying rice growing river deltas of Asia. Coastal cities would be flooded and land area could be reduced in size at a time when population pressures are calling for more land.

Extreme Climatic Changes

Before the world oceans rise dramatically, an increase in global temperature would affect global food production says a study by the Washington-based Worldwatch Institute. The rainfall pattern could shift in such a way that existing dams and drainage systems, built at a cost of billions of dollars, would be useless, and agricultural zones would be moved to higher lati'udes. And marine life would suffer from a lack of nutrients because a "lid" of warm water would impede circulation that normally brings nutrients to the surface.

*Science Correspondent, The Press Trust of India.

These extreme climatic changes are at best a prediction. As the UNEP report says, "the problem is fraught with very large scientific uncertainties" Scientists still do not know how fast the atmospheric CO_2 is recycled by plants and the oceans. They also do not know if the greenhouse warning will be cancelled by the cooling effect of other human activities However one fact is certain : the amount of CO_2 in the air is increasing. Measurements made on top of Mauna Loa, the Hawaiian volcano and at the south Pole—sites far removed from local sources of pollution—showed a five per cent increase in CO_2 in 15 years.

The U.S.A. is by far the largest producer of CO_2. But even if America were to wean itself from fossil fuels over the next two decades, global CO_2 production would continue. The UNEP's report says that by 2025 AD, "the largest rate of growth in CO_2 production will occur in developing countries" which will then produce 30 per cent of the CO_2 as against 12 per cent in 1974. If the entire coal reserves in the world were to be burned, the CO_2 concentration in the atmosphere would increase eightfold.

Energy Crisis

This has added a new dimension to the energy crisis With oil prices going up and nuclear energy still suspect, many countries have increasingly turned to coal. But it appears the ecological consequences would bring a halt to coal consumption long before the world supply had been consumed. A 1977 study by the U.S. National Academy of Sciences concluded that climatic considerations might require the phasing out of fossil fuel use "within the next 50 years".

If this does happen, as the UNEP points out, countries should give consideration to promoting alternative energy sources like solar power and biogas. The UNEP also advises nations to follow the example of China and South Korea in reversing deforstation. For while population pressures will cause deforestation to continue in many tropical countries, community forestry schemes could minimise the harmful impact.

One such village-centred scheme was launched by the Gujarat State in 1973 and has turned out to be a success. By 1978, about 6,000 of the State's 17,000 kilometres of roads and canals were lined with new forest trees and each year trees are planted along another 1,500 kms. About 3,000 of the State's 18,000 villages have established woodlots, and each village has donated four acres for social forestry.

Many more schemes like this and the development of alternatives to fossil fuels will be needed to face the threat to the earth's climate. The UNEP has given the warning but if nations ignore it then climate could become the ultimate constraint on human growth.

—Depthnews India

Shri Narayan Datt Tiwari

SHRI Narayan Datt Tiwari, Union Minister for Planning and Deputy Chairman, Planning Commission, was born in a middle class family in a village in Naini Tal district of Uttar Pradesh in October 1925. Entering politics in 1939, he was an active participant in the 1942 movement as a freedom fighter in Allahabad and was imprisoned for fifteen months along with his father. He later became active in the student and youth movement and was elected the President of the University Students' Union in 1947.

He took his Master's Degree in Diplomacy and International Affairs. He was first elected to the State Assembly of Uttar Pradesh in 1952, and in 1957, he became Deputy Leader of the opposition.

Shri Tiwari has travelled widely and made studies on problems of economic development. In 1959, he visited Sweden on invitation of Professor Gunnar Myrdal, the internationally known economist to study the various economic and social systems of Sweden and other European countries.

In 1969, he was inducted as a Minister for Planning in the UP Government headed by Shri C. B Gupta. He was Finance and Parliamentary Affairs Minister in the Ministeries headed by Shri Charan Singh, Shri Kamlapati Tripathi and Shri H. N. Bahuguna and was Deputy Chairman of the U.P. State Planning Commission for about four years.

Later he became UP's Chief Minister.

In the General Elections held in January 1980, he was elected to the Seventh Lok Sabha.

5 DPD/80—2

Forest Development in Bihar

R. P. Verma*

BIHAR has only 16.8 per cent of its land area under forests as against 33 per cent suggested by National Forest Policy to meet the socio-economic needs of the State as well as the physio-graphic needs of the terrain. Because of very dense population there is high demand for agricultural land. So, there is no scope of utilising more area within forest boundary. But wooded area could be increased by planting up road sides, canal-banks waste lands and lands unfit for economic agriculture. Besides this, more intensive forestry practices, like planting of blank and semi-blank areas inside forest with trees of fast growth and of economic value, rehabilitation of degraded forests and fuller utilisation of standing trees by improved legging and extraction practices will go a long way in increasing the wood resources. Considering this, Fifth Plan provided for planting of trees of economic value and fast growth over 13,000 hectares with species like teak, bamboo, sissoo, eucalyptus, Acacid minoliformis etc. and 612 kms of road side and 518 kms of canal banks with species like sissoo, eucalyptus on canal banks and karanj, gamhar, siris, sissoo etc. on road sides. Soil conservation measures which include afforestation in basins of important rivers have been provided for over 45,000 hectares in the catchment of Damodar.

Tree Planning

Another important scheme introduced during the plan period, to increase the wooded area of the State as well as to make the economically backward people self-sufficient in wood resources has been, to plant timber, fire-wood and fruit-trees on the uplands and lands unfit for economic agriculture of tribals and the backward people residing in the vicinity of forests to provide them employment as well as to put their waste lands to economic use. The objectives of this scheme are to encourage the tribals and other people living in the vicinity of forests and to take to tree planting on their waste lands so that they could get employment and trees so raised could meet their requirement of fuel wood and small timber and the forests which are fast disappearing due to continuous cutting of saplings and poles by the villagers could get a chance to recoup. Eucalyptus and Acasia minoliformis trees and bamboos fetch good prices from the paper mills and the trees so raised on waste lands would fetch good returns to the villagers. Once this scheme of tree planting by the people through extension catches up, a paper mill in Chotanagpur can be established, where sufficient areas of waste lands are available for such planting.

Initial Hesitation

In the beginning, people were afraid of that government may take over their lands if they planted trees on them. So the scheme brought some initial hesitation among the people. In the year 1976, 822 hectares of private waste land were planted and in the year 1977, 592 hectares were planted. There are about 9 lakh hectares of waste land in Chhotanagpur and Santhal Parganas owned by private people which are mostly unfit for economic agriculture. The proper utilisation of such lands is to put them under trees and grass land. It is an admitted fact, Government cannot afford to plant up such large areas quickly. But if through extension, people take to tree planting by themselves, with Forest Department supplying them seedlings and technical know-how, all these areas can be planted up thereby increasing the wood resources as well as making the tribal people self-sufficient in their requirement of fuel-wood and small timber. Planting bamboos and Eucalyptus will provide the raw materials for sale to paper mills which will bring cash returns to the villagers. With their improved economy, availability of fuel-wood and small timber at hand, hundreds and thousands of women who now cut the forests to make a living won't have to destroy the forests. It may be pointed out that of 29,000 sq. kms of forests under the control of Bihar Forest Department more than 80 per cent are ex-Zamindari forests which came under the control of Bihar Forest Department in 1952 after vesting of the State under L.R. Act. The forests were right burdened and fairly degraded when they were taken over by the Forest Department and they continue to be right burdened and subject to fellings by poor people living in the vicinity of these forests and are getting more and more degraded except where the plantations are raised. The only way to improve the economy of the local people is to provide fuel-wood and small timber to them and to take up large scale rehabilitation and replantation programmes.

Minor Forest Produce

Other development schemes taken up during the plan period are development of minor forest produce like rouwifice and sisal which give a revenue of Rs. 2 lakh annually from the plantation. Manufacture and sale of sealing brings a revenue of Rs. 60,000 annually Departmental exploitation of forest coupes makes a turn over of Rs 12 lakh annually and a net profit of Rs. 8 lakh after paying the royalty to the Forest Department and meeting all expenditures including establishment and depreciation costs etc.

Sale of timber and Kendu leaves brings an annual revenue of Rs. 14 crore, while 15,000 tonnes of sal seeds have been collected by Forest Development Corporation which will fetch a revenue of Rs. 1.20 crores. The Biological Park at Patna has been well developed and the Park earns a gate fee of Rs. 500 per day, which shows its potentiality. Tiger Projects in Palamau, National Park at Hazaribagh, Sanstuaries at Dalma and Bhulua are being developed.

Forest Department gives employment equivalent to 4 crore mandays excluding the employment given by Forest Development Corporation. Besides, it makes available forest produce free to right-holders upto the value of Rs. 2 crore in the shape of timbers, fuel-wood, fruits, flowers, bark of trees, bamboos etc. The out turn of timber and fire-wood forests of Bihar is of the order of 9 million metric metre 15 lakh tonnes of bamboos, about 9 lakh bags of Karauj leaf, 15,000 tonnes of sal seeds besides other forest produce like fruits, flowers, resins and gums etc. □

*Lecturer, Doranda College, Ranchi.

Crop Doubled In Chambal Command Area

Munish Joshi

THE PER hectare crop yield in Kota and Bundi districts of Chambal comand area has become double in the last three years. In 1957 the yields of paddy and sorgum were 20 and 4.4 quintals per hectare which have now gone upto 43.6 and 8.8 quintals respectively this year.

The record yields obtained under a World Bank Aided Project in Chambal command area were made possible through timely supply of inputs, better irrigation facilities and extension of agricultural services to the farmers of the area. The project was started in June, 1974 with the assistance of Government of India and World Bank costing rupees seventy seven crore for development of cropping pattern for increasing water use efficiently, soil and water management practices, suitable methods of application of irrigation water, judicious use of irrigation water, introduction and expansion of varieties which suit the best in the existing agro climatic condition of the command area, optimum doses of different nutrients for the various crops, control of aquatic weeds in the canals and reclamation of saline and alkaline soils in six panchayat simitis of Kota and Bundi districts of Chambal irrigation project' which is second in Rajasthan after Rajasthan canal Project. The project covers 745 villages of the above six Panchayat Samitis of the two districts having 68,715 families.

The Chambal irrigation system had created many problems like water logging besides salinity and alkalinity and the cultivators could not cultivate even a single crop what to say about the double cropping. Hence command area development project was started to sort out these problems and achive integrated development of the area in time bound period of six years.

Irrigation

By two main canals emanating from Kota Barrage on Chambal river 2,29,000 hectares of agriculture land is being irrigated in Kota and Bundi districts of Rajasthan. According to appraisal report of the project 21 kilometers canal is to be lined at a cost of rupees five hundred twenty lakh. Upto the end of May this year lining in 14.85 kilometers has been completed which is 66.5 per cent of the target. The canal capacity augmentation works have been completed in 172.60 kilometres out of 854 kilometres for remodelling work of the channels. As per project target 157 control structures are to be constructed and out of this 16 control structures have so far been completed.

To maintain continuous flow of canal water, control on aquatic weed which has grown in canals, and distributaries is very necessary. A fish pond has been constructed in Soor Sagar, Tank to rear grass carp fish for releasing into canal as a biological method of weed control. This kind of fish will eat weed and the problem will be solved. About 32 per cent of the work against this item like construction of outlets escapes, cart track crossing and training of nallahs on right main canal has already been completed besides acquiring some weed cutting boats.

On-Farm Development Works

Against a target of 5,000 hectares, on-farm development works in 6000 hectares have been completed. The on-farm development works include construction of water courses, field drains, farm roads, rectangularisation of field boundaries, realignment and land levelling/shaping etc. Progress of on-farm development works has been slow in the last three years due to non-availability of machines and survey reports but during 1977-78 the O.F.D. works picked up with the help of machines purchased worth rupees half a crore. To complete the work in 10,000 hectares in coming season the Government of India have agreed for payment of enhanced crop compensation to the cultivators to forgo their rabi crops in their field.

Drainage System

To check water logging, survey in 2.29 lakh hectares and planning and construction of drains in 1.67 lakh hectares are to be done in project period. Along the canal and distributaries much agriculture land has become unfertile due to seepage and hence drainage work has been envisaged. Upto this year, drainage work in 8250 hectares has been completed at the total cost of Rs. 609.148 lakhs including the cost of the machines for the work. Now more machines have been purchased through international competitive bidding to step up the progress.

Roads Development

Out of 247 kilometres of roads to be constructed during the project period, 130.60 kilometres of roads have so far been completed in the command area. Out of a target of 57 kilometeres for 1978-79, only 14.80 kilometeres of roads have been completed and for next year Rs. 220 lakh will be spent on 14 incomplete roads. Progress on roads in rural area is quite nil whereas roads condition in the districts is also very bad. Without connecting the villages with the roads, economic condition of the cultivators cannot improve as 80 per cent villages of the project area have no fair weather roads and the farmers are unable to sell their produce in the mandis. Object of the project will not be achieved till rural road development programme connecting all the project villages is fully implemented.

Cooperative Movement

To advance loans to the farmers for purchase of fertilizers, seeds and agriculture implements, there are

*Journalist, Kota

By the two main canals emanating from Kota barrage on Chambal river 2,29,000 hectares of agriculture land is irrigated.

178 primary agricultural credit societies in the command area. Loans to the farmers have been distributes as per details given below .

(Rs. in lakhs)

	Loans distributed in			Proposed for 1978-79
	1975-76	1976-77	1977-78	
Kota District .	463.61	340.57	223.18	100
Bundi District .	259 01	349.97	226 12	75

At the district level there are two Central Co-operative Banks at Kota and Bundi. The Kota Central Cooperative Bank has got 15 branches of which 6 branches are working in command area falling in Kota district and 5 in Bundi district command area out of 7 in the district. As the recovery of cooperative loan is poor, many farmers could not get loans. Unless loan advancing machinery through societies is strengthened, the object of the movement as well as of the project cannot be achieved.

Afforestation

Plantation and advance soil working is proposed in 1000 hectares in the command area. The targets of advance soil working have been achieved and plantation in 950 hectares has already been completed by end of August this year.

Agriculture Extension Programme

Agriculture Extension is the key unit of the project The purposes underlying the new extension approach are to :

(a) help farmers to get the highest income from their available resources,

(b) close gaps between what is known and wh is practiced by the farmers, and

(c) put pressure on research to solve the fie problem faced by the farmers.

Evaluation Methodology

Since the basic object of this study is to acertain tl economic and technical impact of the programme the area, two broad aspects i.e. (1) yields, and (adoption of recommendations have been studied. I crop cutting under this methodology, following thr systems have been adopted :

(i) Identification of chaks, selection of fields, ar collection of field information

(ii) Demarcation of plot within the fields, ha vesting of demarcated plot and filling (data, and

(iii) Final weight after drainage.

Input Management

With the effective extension service, demand for tim ly supply of inputs and credit increased due to pressu from the farmers and off take of seeds, fertilizers h gone up considerably. In 1977-78 the distribution improved seed has gone upto 2500.13 quintals again 1473 54 in 1974-75. Similarly is the case of fertilizer The total consumption in terms of nutrient has go upto 17,740 tonnes in 1977-78 against 15,934 tonn in 1974-75.

Impacts of the extension programme over the ag culture production in the command area crop cutti trials on important crops has been very encouraging is evident from the following table :

Corps/ years	Average yield in quintals/Ha. Base year production	1974-75	75-76	76-77	77-78
Paddy	21.00	33.85	33.51	36.06	43.06
Jowar .	4.40	N.A.	4.02	6.63	8.30
Sugar-cane	400.00	N.A.	N.A.	593.78	605.03
Wheat .	12.00	22.99	22.67	21.12	N.A.
Gram .	6.00	11.01	7.49	9.37	N.A.

The cropping intensity in kharif as well as rabi also increased during the past three years. At present it is 30 per cent to 35 per cent in kharif and 75 per cent to 80 per cent in rabi. In this way the total cropping intensity has increased between 105 to 110 per cent. The steps to popularise advance planting of kharif crops particularly jowar, maize, kharif pulses and oil seed are also being taken. The Government has allowed recently to use irrigation water free of cost to these crops because it is felt that once this practice becomes popular in the area, this would not only increase the kharif irrigation intensity but would also considerably help in boosting production of these crops.

To support the extension activities, research is the base. The project has got complex problems like reclamation of salinelands, development of suitable cropping pattern, based on geological factors, working out consumptive use of water for different crops and development of suitable crop varieties. At present the research work is being carried out on a limited basis. The Government has agreed to strengthen research so that the problems related to the project are taken up accordingly.

Crab Control in the Canals

Crabs make burrows and holes in the canals which lead to heavy leakage of water. This water which leaks through the canals not only goes waste but also spoils the adjoining fields by water logging. Timely action for the corrective meaures for this serious problem has been taken. Experience indicates that fumigation of barrows by ethylene dibromide proved to be the best which can kill the crabs within 5 minutes. A fumigating gun has also been devised through which fumigation is done in the burrows.

The first phase of the project would be completed by 1980 and second phase would commence from 1981. The works to be taken up in the second stage have been finalised. ☐

State's Role in Industrial Development

Gopala Krishna Pillai*

THE industrial sector needs a constant vigil to attain the 'take-off' stage It is the responsibility of the development machinery to help in developing a climate of its growth.

The Kerala State Industrial Development Corporation Limited, one of the largest organisations in the State sector, serves both as a promoter and a direct instrument for indusrial development in the State. The corporation was set up on July 21, 1961 with a view to taking up broad-based programme of industrial development within the State. The programme includes establishment of industries and the development of entrepreneurship and industrial skill within the State. The promotional functions cover a wide range of pre-entrepreneural activities, which include investigation of projects, preparation of project reports and obtaining industrial licences under the Industries (Development and Regulation) Act, securing technical collaboration and finding institutional finance.

In pursuance of the above tasks, the Corporation has set up 18 industrial units. The estimated cost of these projects amounts to Rs. 43.02 crore, with employment opportunities for more than 5,000. With the introduction of Joint Sector by the Central Government, the Corporation has also made efforts to promote several such participating entrepreneurs. Eleven such units have so far come up of which eight are in poduction and the rest are expected to start production by the end of 1980.

As a promoter the Corporation has made remarkable achievements. Besides various promotional activities, the Corporation actively participated in a meeting of industrialists called on at Bombay by the State Industries Minister on 18th and 19th May 1979. It is proposed to hold similar meetings in other centres also. The corporation has launched a programme of organising meetings of professional managers and knowledgeable persons in major industrial centres inside and outside the State to generate viable project ideas. The objective is to augment its efforts in generating a shelf of project profiles for further development to project reports for implementation.

As a whole the Corporation has rendered assistance in one or the other form to 66 units by the end of March 1979 with an estimated total investment of Rs 155 crore. These units have an aggregate employment potential (direct) of around 23,700 persons. The Corporation sanctioned financial loan amounting to Rs. 141.50 lakhs to various units as against Rs. 111.50 lakh in the previous year.

In Kerala where industrial entrepreneurship and capital appear to be lacking, the Industrial Development Corporation has a very significant role to play in the industrialisation of the State. It has not only to take up more industries but also to act as a channel for more investment for the industrial growth of the State. ☐

*Department of Commerce, Sree Narayana College, Cannanore.

5 DPD/80—3

Availability Of Petroleum Products

G. K. PANDEY*

THE petroleum products crisis which has been causing grave concern to the government and the consumers for over four months has somewhat eased lately, though the position continues to be far from satisfactory. Panic buying for products like High Speed Diesel oil and kerosene has surely abated, thanks to the timely action taken by the policy makers in organising imports and transportation of products virtually on a war footing. In spite of the dislocation in domestic supplies of products due to the Assam agitation, it has been possible for the Central Government to make significantly higher HSD and kerosene allocation to the states.

The extent of increased allocations varied between 10 and 13 per cent. It may be interesting to note that diesel allocations to states progressively rose from 706,189 kilolitres in February to 1,122,402 kilolitres in March and 1,139,650 kilolitres in April. Similarly, kerosene supplies have increased to 315,676 kilolitres in April. Statistics show that the demand for products is being met not only of the consuming states but also of he north-eastern region which is a major source of supply of petroleum products and crude oil. Diesel and kerosene to the north-eastern region is being supplied from the Haldia Refinery.

Larger Imports of HSD, Kerosene

To achieve this virtually impossible task of meeting the demand for products, the government had been importing for the past two months 400,000 tonnes of HSD instead of the earlier stipulated level of 250,000 tonnes. Similarly kerosene imports were higher at 350,000 tonnes instead of 140,000 tonnes.

Additional imports of HSD and kerosene alone could not have solved the problem. Apparently, it called for a major effort to organise movement of products from the port locations to the consuming areas which was by no means an easy task. In the absence of normal channels of pipeline transportation, the railways were asked to make available larger number of tank-wagons for movement. As a result of coordinated efforts of the Railways and the Indian Oil Corporation, loading tank wagons from the supply locations has progressively gone up.

The broad gauge loading of the tank wagons recorded an impressive rise from 1540 per day in February to 1609 in March. And in April, which is a crucial month for agricultural operations, loadings upto April 15 had touched a record level of 1674. In the case of metre gauge, loading had gone up from 278 per day in February to 287 per day in March. In April the level of loading had gone upto 304 per day. Indications are that the level of loadings will improve further.

Normalcy in Eastern Region Necessary

But in spite of all these efforts, the situation continues to be quite serious., A real turn in the situation could be expected only after the situation normalises in the eastern region. Huge losses have already been incurred in the wake of disruption of petroleum products and crude oil supplies from the eastern region. Even though Digboi and Gauhati Refineries have lately been operating intermittently, crude oil and petroleum products have not flown out of Assam state since the last week of December. In fact, the north-eastern region's demand for HSD and kerosene and even motor Gasoline is being met from Haldia

Apart from the three Assam refineries, the Barauni Refinery in Bihar which is one of the major sources of petroleum products supplies to Bihar, Uttar Pradesh and other northern states has also remained closed since the beginning of January.

Severe Loss of Economy

The magnitude of the problem could be judged from the fact that stoppage of petroleum products supplies from Assam has meant a loss of Rs. 350 crore per month, Rs. 100 crore by way of petroleum products and Rs. 250 crores loss in terms of industrial production. Although no official estimate has been made of the losses in industrial products as a result of shortages of petroleum products, it is generally believed in industrial circles that dislocation of supplies had resulted in a loss of Rs. 7000 crores.

*Journalist, New Delhi.

In case the shortfall in crude production from Assam were to be taken into consideration, the overall losses would work out to a staggering figure. Out of the 12 million tonnes of anticipated indigenous crude production this year, eastern region is expected to contribute 4.8 million tonnes or roughly 14,000 tonnes a day. At the ruling international prices of crude the daily loss in crude production works out to about Rs. 30 lakh per day.

Even though the Government is doing its best to make up for the shortfall in the availability of petroleum products, production losses in the eastern region have to be viewed with concern. Product-wise as much as 1.5 lakh tonnes of diesel and 33,000 tonnes of kerosene is being lost every month.

Increased Products Imports Unavoidable

In case, an early solution is not found to the crisis in the eastern region, the gaps in supply will have to be made through larger imports. It has been estimated that 6 to 7 million tonnes of products might have to be imported against the estimate of 5.3 million tonnes. According to the original schedule, the government had decided to import this year 16 million tonnes of crude in addition to 2.8 million tonnes of HSD, 1.7 million tonnes of kerosene and 8 lakh tonnes of oil.

Although it is far more economical to import crude than products, the government has to depend on import of products because of limitation of refining capacity. Barring the four eastern sector refineries all other refineries are operating at the optimum level. Thus the larger imports of products are inescapable.

Consumption Growth Rate UP

On the basis of 70 per cent growth in demand, the government had decided to make available during this year 33.2 million tonnes of products as against 30.5 million tonnes in the preceeding year. This means that a growth rate of 10 per cent is being allowed in the consumption of petroleum products. But judging from actual consumption, it may be necessary to organise additional products.

It may be interesting to note in this regard that annual growth rate for HSD was 8 to 9 per cent until 1977-78. It was a little over 11 per cent in 1978-79 but the latest estimate for the current year is 16 per cent. In the absence of adequate power generation in the country industrial units are leaning heavily on petroleum products, particularly diesel for their captive power generation. The phenomenal increase in diesel consumption this year is also on account of a number of factors like drought and increased transportation of goods by road.

Thus, just as consumption of petroleum products is on the increase there are no signs yet of crude and petroleum products flowing out of Assam. No doubt the government can meet the demand by importing additional quantities of products, this would, however, mean a great strain on the foreign exchange resources of the country. Even under its original plan of imports, the government would have to spend over Rs. 5,000 crore which is roughly 75 per cent of the total export earnings. (Courtsey : A.I.R.)

Save Petroleum

As we move forwards the year 2000, the scarcity of petroleum will be increasingly felt.

Prices are bound to rise and enough fuel may not be available to go around.

Today India's annual oil consumption is three crore tonnes.

Yet demand is constantly on the rise.

It is , therefore, our aim to try and curb consumption—not by making less available to users, but through more efficient use of every drop of oil.

The target is modest : 5 per cent. But at current prices, it would lead to a saving of over Rs. 200 crore in foreign exchange every year—savings which would otherwise go up in smoke.

Oil

is petrol
is gas
is kerosene
is diesel
is furnace oil
is lubricants
and a thousand
other products
in your daily life

Do you know ?

*Housewives—you can save 40 per cent of cooking fuel by lowering the flame once boiling starts !

*Motorists—you can go twice as far at 40 kmph on a full tank, as at 80 kmph !

*Industrialists—one small leak in a high pressure steam line can waste 60,000 litres of oil a year !

*Farmers—save 30 per cent of light diesel oil in lift irrigation by selecting the proper pump, pipelines and fittings !

Growth and Performance of Public Sector in India

Biswanath Lahiri*

Durgapur steel plant

THE GROWTH of public sector enterprises in the country is a post-independence phenomenon. Soon after independence, it was realised that the industry had cropped-up hapazardly lacking both direction and regulation. The foreign industries were working contrary to the national interest. The Industrial Policy Resolution of 1948, sought to correct these gaps, laid down the basic policy for industrial growth in future and stressed the role of the State in establishing and running the industries.

Due to the changed situation on account of the introduction of Constitution and setting up of Planning Commission in 1950 and the acceptance of the "Socialistic Pattern of Society" by the Parliament in 1954, a new and more comprehensive Industrial Policy Resolution was announced in April 1956 to determine the future shape and structure of industrial activities. Under this policy resolution, a clear demarcation was laid and the State was given a direct responsibility for the growth and development of basic and strategic industries which were beyond the capacity or the interest of the private sector to undertake. The State was thus given a greater role to play in the industrial development of the country.

The New Industrial Policy which was announced in December 1977 favoured the same pattern of industrial development as enunciated in the Industrial Policy Resolution of 1956. The New Industrial Policy Statement assigns to the public sector "an expanding role" in several fields. The policy categorically states that the public sector will not only be the producer of important and strategic goods of basic nature, but "it will also be used effectively as a stabilising force for maintaining essential supplies for the consumer". In addition, the public sector will also be charged with the responsibility of encouraging the development of a wide range of ancillary industries and small-scale and cottage industries by making ava able its expertise in technology and management.

*Is with department of Management, Banaras Hindu University.

Since the second plan, there has been a larg scale growth of public enterprises in India. Sin 1950, the number of central public sector enterpris has increased from 5 to 153 and the capital inve: ment has swelled from Rs. 29 crore to ov Rs. 12,851 crore. This comprises about Rs. 6,7 crore as paid-up capital and Rs. 6,066 crore long-term loans. These figures exclude the investm in departmental enterprises of the Central Gover ment like Railways, Posts and Telegraphs and oth exclusively engaged in banknig and financial acti ties. If all these are included, the size of investm in public sector will be very much large indeed.

The largest investment in non-departmentally r enterprises is Bokaro Steel Ltd. which is the bigg company not only in public sector but in the count as a whole and accounts for a total investment Rs. 1436 crore.

The total investment in these ten enterpris amounted to Rs. 7090 crore which constitutes ov 55 per cent of the total investment of Rs. 12,8 crore in the public sector undertakings.

The investment in basic and core industries li steel, minerals and metals, coal, oil, chemic engineering etc. is more than Rs. 10,576 crore, th is 82 percent, of the total. Industries of this sc are not only capital-intensive but also have lo gestation period and yield a low rate of return.

Performance Evaluation

The evaluation of the performance of public ent prises is somewhat difficult compared to the priv enterprises which are profit-oriented. The gene practice to measure the performance of an enterpr is the profitability on capital investment, whether t

alone can be a valid test to judge the efficiency and success of public enterprises is a debatable point. It is, in fact, accepted that this alone is not the correct yardstick, because the public enterprises have to function under conditions and constraints entirely different from the private enterprises. Take for example, the operational policies, like the price policy of public enterprises, are framed in consonance with government directives. Further, many of these enterprises are operating in an area where the gestation period is long. Again, many enterprises are established to provide the infrastructure to the economy where the main consideration is to derive long-term and indirect benefits rather than immediate return on the capital invested. Often in view of pressing developmental needs, the Government entered into collaboration with other countries which are sometimes not favourable to us or not entirely economically justifiable. But lack of our adequate experience in initial stages and shortage of funds together with our desire for quick development forced us to enter into such ventures. Further, the decision to set-up plants in particular areas are taken not out of sound business decisions but because of reasons of "balanced regional development."

The proper appraisal of the working of public enterprises requires laying down of suitable standards of performance and mentioning yardsticks to make comparison performance with the estimated one. We can evaluate the performance of a public enterprise in terms of the success it achieved in following areas and in order mentioned below :

(a) Promoting of the non-commercial objectives, that is social objectives, of the enterprises
(b) Promoting of the commercial objectives of the enterprise and maximisation of profits keepin view Government rules and regulations
(c) Improving the standard and quality of products and services, and
(d) Effecting economy and efficiency in the use of both financial and non-financial resources.

The profitability criteria has been placed second next to that of fulfilment of non-commercial objectives because the public enterprises are expected to function in the larger social interest and their very creation is based on the considerations other than mere earning profit. This, however, does not mean that the public enterprises should not emphasise earning of profit. Earning of profit is important for generation of new capital and making an enterprise economically viable. It is therefore necessary that a rate of return is fixed for each public enterprise after taking into consideration totality of circumstances, constraints and parameters within which a unit operates. The third and fourth criteria go along the line of profit criterion

Operating Results

The 142 operating industrial and commercial undertakings of Central Government collectively earned a net profit (after tax) aggregating to Rs. 25.46 crore as against Rs. 239.11 crore in the previous year. Of the 142 running enterprises, 81 earned a total profit (before tax) of Rs. 627 crore while amount of loss incurred by 61 enterprises was Rs. 391 crore. Thus, the net profit before tax of these concerns is Rs. 236 crore as against Rs. 427 crore in 1976-77. Among the major enterprises which earned profits are Petroleum (Rs. 224.72 crore) the M.M.T.C. (Rs. 45.21 crore), Bharat Heavy Electricals (Rs. 32.52 crore), State Trading Corporation (Rs. 40.20 crore), Air India (Rs. 26.45 crore). The decline in profit was mainly on account of nine undertakings, four of them showing increased losses and other five profit making undertakings incurred losses in 1977-78. Hindustan Copper Limited (Rs. 31.11 crore), Heavy Engineering Corporation (Rs. 30.26 crore), Mining and Allied Machinery Corporation Ltd. (Rs. 24.91 crore), Shipping Corporation of India Ltd., (Rs. 10.10 crore) were in latter categories. The combined losses of these five undertakings in 1977-78 worked out to Rs. 111.12 crore in sharp contrast to a profit of Rs. 11.69 crore in the preceding year. In Coal India Ltd. and its subsidiaries, Fertiliser Corporation of India Ltd., Indian Iron and Steel Co. Ltd., and National Mineral Development Corporation Ltd. losses were more than doubled from Rs. 96.46 crore in 1976-77 to Rs. 200.51 crore in 1977-78.

On a capital employed of Rs. 11,405 crore in 1977-78, the gross profit after providing for depreciation and other expenditure amounted to Rs. 947 crore. The return on capital employed worked out 8.3 percent as against 9.7 percent in the previous year. The net profit before tax comes to about 3 percent of the total investment and post-tax return is negative. The dismal performance of the public sector can further be visualised from the fact that their total accumulated losses upto March 1978 were Rs. 1240 crore which is more than 15 percent of their share capital. In some enterprises like the Mining and Allied Machinary Corporation, Hindustan Antibiotics etc. figure of losses even surpassed capital. By normal accounting practice and standard, they would have been bankrupt long time back. It is very surprising that some of the items like coal or scooter in which public sector has either total monopoly in trading or has a ready market incurred losses.

The poor performance of the public sector undertakings in recent past have castigated doubt about their ability to fulfil all expectations held about them. The public sector should squarely be blamed for all this. Instead of being a source of finance for the Budget, they have become a heavy financial drag. To upkeep them, Government have to raise additional funds by way of taxes. The tax-payers are, on the other hand, preached that profit is not the sole criterion of success of public enterprises. But such arguments are not at all tenable and are certainly an effort to cover the lacunae. The public sector is, afterall, not in business only for the sake of business. It is absolutely necessary that the public enterprises should earn a rate of return large enough to make them a viable unit. A number of committees have expressed similar view. Even the Planning Commission forcefully pleaded that public enterprises should earn a return of at least 12 percent which is necessary to generate new capital for development and expansion. If the investment made on public sector, that is Rs. 13,000 crore, had earned the minimum return of 12 percent, it would have contributed the

(Contd. on page 28)

Second Phase of Neyveli Lignite Project

A. Karuppaswamy*

COAL will be the main source of energy for the next few decades. The policy of the Government is that industries should not waste oil and natural gas but utilise coal instead. The ever-increasing cost of oil whose last escalation has been causing more than Rs. 1200 crore to the exchequer, has created the necessity to develop our coal resources and its effective utilisation. It is this pragmatic pholosophy of the government which has led to the birth of the second mine cut at Neyveli, in Tamil Nadu.

It is heartening to note that work on the second thermal station has begun though four years behind schedule. The integrated Neyveli Project, set up in 1956, consists of a lignite mine for ultimate production of 6.5 million tonnes annually, a thermal power station to produce 600 megawatts, a fertiliser plant to manufacture 1.52 lakh tonnes of urea per annum, a briquetting carbonisation plant for 3.27 tonnes of carbonised briquettes per annum and a small clay washing plant with a capacity of 6,000 tonnes of washed clay annually.

The recently inaugurated new complex has a lignite mine with a production capacity of 4.7 million tonnes of lignite per annum, and a power station, with a capacity of 630 MW consisting of three units of 210 MW each. The entire complex costs Rs. 400 crore. Production of lignite is expected to begin in 1982 and the last set of the thermal unit will be commissioned by April 1983. The new power station will provide employment opportunity for nearly 2400 persons.

The Lignite bearing area in Neyveli has a total reserve of about 300 crore tonnes. In the northern part of this lignite-bearing area, the first lignite mine, opened in 1957, spreads over 15 sq. km. This has a mineable reserve of about 24 crore tonnes. This mine is now feeding lignite to the existing thermal plant, the fertiliser plant and the briquetting and carbonisation plant. The site for the second mine is situated 5 km south of the first one covering an area of 26 sq. km with a mineable reserve of about 36 crore tonnes. Mining operation will be taken up initially in the western block where the conditions are more favourable and has a mineable reserve of about 19 crore tonnes.

The average over burden to lignite ratio in the first sub-block is of the order of 4. : 1 with a maximum over burden cover of 75 m. The second mine will be developed in swinging pattern with the pivot at the southern end of the initial mine cut. The position of the pivot will charge only once during the life time of the mine to facilitate the swing operation.

The lignite mines at Neyveli have been associated with hydrological problems. The confined ground water, below the lignite seam, in the acquifer sands, exerts an upward pressure of 5 to 8 Kg. per square centimetre. For successful mining of lignite, depressurisation of the acquifer is essential and the presure surface is constantly maintained below the lignite seam by large-scale pumping at the rate of 32,000 gallons per minute. The problem is that for mining one tonne of lignite it is necessary to pump about 20 tonnes of water from a depth of 90 to 100 metres. But this problem has now become a blessing. The Tamilnadu Government is to draw up a scheme with the help of the World Bank to bring the water, generated at Neyveli to Madras to step up the drinking water supply. The Neyveli lignite will feed the thermal station and its water will feed the citizens of the Madras city, two hundred miles away. With all these the wheels of progress of the State will never stop for want of energy in future. ❑

*Senior Correspondent, A.I.R., Madras.

Curse Turned into Boon

Mahendra Jhamb

MADHYA PRADESH, the largest State of India had been affected by the drought in the previous years but this time it is experiencing the worst drought of the century. As many as sixteen districts are totally affected. Seven are badly affected and another five are partially affected. The remaining districts have certain pockets which are affected by the drought.

It has been estimated that the crop loss due to the drought exceeds Rs. 500 crore. Both Kharif and Rabi crops have been badly affected.

The 16 worst affected districts are : Raipur, Durg, Bilaspur, Sarguja, Raigarh, Sidhi, Shahdol, Satna, Rewa, Mandla, Jabalpur, Damoh, Chhattarpur, Panna, Rajgarh and Dattiya. During a recent tour, the Prime Minister visited the drought-affected remote areas of Sarguja, Raipur, Bilaspur, Raigarh, Rajnandgaon, Durg and Satna Districts.

Herculean Task

To provide relief to the people of the badly affected areas in a State comprising 70,883 villages of which 20,374 are affected by drought is by itself a herculean task. The whole of the administrative machinery has been geared to meet the situation, almost on war footing.

The work of identification of drought affected areas, formulation of scarcity relief schemes and conservation of available meagre water resources was taken up as early as September, 1979 and relief works opened in October-November, 1979. The pace was rather slow in the beginning. The installation of new Government headed by Shrimati Gandhi at the Centre in January. 1980 and the promulgation of President's rule in the State in February, 1980 gave a big boost to the relief measures in the drought affected areas.

*Deputy Principal Information Officer, PIB, New Delhi.

The Prime Minister's 12-point programme for drought management has further accelerated the tempo. Presently there is a virtual flood of relief works in the severely affected areas. Massive Central assistance totalling Rs. 48 crore has already been extended. The Centre has also provided the State with 3.51 lakh tonnes of foodgrains under the normal and special Food For Work Programmes. Two hundred tonnes of skimmed milk powder has also been made available.

To provide relief to 26.4 million people affected by the drought, the following three-point formula has emerged as the guiding principle for the authorities directly incharge of the relief works :—

(1) No village shall remain without adequate supply of drinking water.

(2) Employment to all able-bodied inhabitants of the affected area.

(3) No starvation deaths to be allowed.

Drinking Water

The entire Public Health Engineering Department headed by Engineer-in-Chief, Shri Pushkar Nath Qazi is now engaged in the task of providing drinking-water to the drought affected villages. This is in addition to its normal duties of maintaining adequate water supply to urban areas. It was envisaged that 8506 villages would be provided drinking water by drilling tubewells. Of theses 5475 were covered by the end of April The entire lot would be covered by June.

Similarly, 6848 villages were earmarked for digging new wells or deepening the existing ones. Of these 5686 were covered by the end of April, and the rest by June. Another 470 villages need transportation of water by tractor-tankers on bullock carts. By April end 123 mobile distribution units were in operation

By the end of April 150 drilling rigs were in operation throughout the State. The number was expected to go upto 217 by the end of June. The fast drilling rigs have now come to be known as wonder rigs because these rigs complete the work of days and weeks in just a few hours. Presently 50 tubewells are being bored every day in the hard rock areas.

Bulk orders for the supply of 10510 India Mark II handpumps have been placed. This includes 2000 pumps, expected through UNICEF. Handpumps are now becoming a common sight in the villages. The water coming out of the handpumps is decidedly more hygienic than the water taken from the normal dug-wells and *jhirias*.

Jobs For All

Employment to all able-bodied inhabitants of the affected areas is being provided under the Plan Schemes, Food For Work Programme, Village Roads Programme and other scarcity relief works. Scarcity

relief works have not only provided employment to lakhs of inhabitants of drought affected areas but at the same time have created valuable permanent assets in the State. The figures are fast changing, moving upwards. Every day about 30 lakh people are being provided employment in over 54 thousand works. The relief works have in fact taken the shape of massive rural reconstruction programme.

Chhatisgarh area, comprising Raipur and Bilaspur Divisions, is the worst affected area of the State. The relief measures undertaken during the current drought will substantially change the landscape of the region. In Raipur Division alone, additional irrigation potential for 1.37 lakh acres has been created. As many as 2667 village tanks have been deepened and 630 irrigation tanks repaired. Irrigation channels measuring 185 kms have been constructed. In Plan scheme terms the target fixed for 1981-82 has already been achieved.

In the past few months 4493 kms. of village roads and 101 kms of district and State highways have been constructed or repaired in Raipur Division.

The average daily employment generated in the Division during the past few months is given below :—

October 1979	1.5 lakh	January 1980	3 64 lakh
November	1.91 lakh	February	4.41 lakh
December	2 67 lakh	March	5.88 lakh
		April	6 5 lakh

The acceleration of the relief works is clear from the fact that in April 1980 there was four-fold increase in the work force compared to that of October, 1979.

Wages Increased at P.M.'s Instance

When the Prime Minister, Shrimati Indira Gandhi visited Chhatisgarh area in middle of April she was told that the wages paid to the workers were quite low. She immediately ordered an upward revision of the wages paid to the workers. At her instance the wages were fixed at Rs. 4.50 for both male and female workers in lieu of Rs. 3/- for female worker and Rs. 3.20 for male worker. Children above the age of 12 years are paid at the rate of Rs. 2.80 per day. Educated unemployed workers are paid Rs. 2/- extra per day in case they take up manual work.

An interesting outcome of all these efforts is that the people have become quite choosy both in the matter of work as also the form of wages. Most of the people prefer to work under the scarcity relief measures programme as they can finish the stipulated piece of work in the forenoon hours, relax during the afternoon and collect firewood or tendu leaves in the post-afternoon hours. Most of the people insist on the payment of wages in the form of foodgrains rather than cash—this means additional benefit of Rs. 3 to 4 per working pair—and are willing to wait for a week or so if the foodgrains are not readily available.

More than 13 lakh expectant and nursing mothers, pre-school children, old and infirm persons, destitutes and physically handicapped have been fed free of cost. In addition, more than one lakh old, infirm and sick persons, with no one to support them, are being given gratuitous relief

Steps have been taken to feed nearly 27 million head of cattle The State Government is running 89 cattle camps in and around water sources. About 24,000 tonnes of dry fodder have been conserved for emergency use.

Some bottlenecks due to the failure of machinery or communication gap are perhaps natural in an operation of this magnitude but by and large the administration has been able to tame this dreaded monster of drought by harnessing the idle manpower of the affected areas to create really useful assets which would in the long run benefit not only the region or the State but the whole country by contributing more foodgrains to the national granary. There has been no dislocation of age-old life patterns no noticeable exodus of cattle or human population, no panic, no food riots and, above all no ugly demonstrations □

Dr. Manmohan Singh

DR Manmohan Singh, the new Member-Secretary of Planning Commission, is one of the eminent economists of the country and has been an expert adviser to the Central Government in trade and financial matters.

Born in September 1932, Manmohan Singh, studied with distinction in the Universities of Panjab, Cambridge and Oxford. Between 1957 and 1971 he taught economics in Panjab University and in the Delhi School of Economics. In between he served as Economics Affairs Officer, UNCTAD (1966) and Chief of Financing for Trade Section, UN Secretariat (1967—69). He was appointed as Economic Adviser to the Ministry of Foreign Trade in 1971 and later as Chief Adviser to Ministry of Finance in 1972, in which capacities he participated in many important international conferences. He became Secretary to the Department of Economic Affairs in November 1976. He was appointed as Member-Secretary, Planning Commission in April this year.

Rural Industrialisation in Low Income Countries

Dr. O. P. Maurya*

IN low income countries agriculture plays a large part in total activity and output, and in many of them much effort is spent on the establishment, extension and improvement of agricultural holdings. In the conventional estimates of capital resources and of capital formation in low income countries the results of the expenditure of time, effort and money in the creation, extension, improvement and upkeep of agricultural holdings are often disregarded.

In low income countries the amount and range of activities and transanctions affected are relatively more important than in the western countries, and the conceptual problems raised are more acute. In many low income countries the concept of the family is much wider than in the west; other things being the same, this means that services produced by members of the so-called extended family group for consumption within the family occupy a more important place in economic activity. Services rendered by an individual for his own use, or for use within the family circle in the more restricted sense of the term, also tend to be relatively more important in low-income countries than in economically advanced countries or regions. Investment involves the commitment of money or effort for a more or less specific purpose over a period of time in conditions of uncertainty about prospective supply and demand. A given investment which seemed justified and profitable at the moment when it was made may turn out to be mistaken if expectations about supply and demand conditions are falsified. Conversely, improvements in market conditions may raise the value of capital assets far above their costs.

The average level of capital income in the low income countries is very low. Rural and urban poverty are widespread within the low income countries but degree of income inequality in the rural sector is substantial. Some people are more industrious than others, and more adept at accumulating wealth than others. Opportunities cannot in the very nature of things, be equal for all. In the absence of strong distributive income policy, income inequality will inevitably accompany industrialisation because of the inequality of skills and wealth that differs in individual ability and initiative. Income inequality may cease to increase, if the Government of a particular low income country adopts a constructive policy for transformation of rural economics from a primitive subsistence state into an industrial society.

Occupational Structure and Employment

In subsistance agriculture in particular as well as in many other farming pursuits, the demands on labour vary greatly with the seasons. Labour which appears to be idle during one season may be indispensable at the time of planting and harvesting. There is a large element of part-time or seasonal employment which complicates the definition of the employed labour force. It follows that it is not easy to measure the volume of involuntary unemployment in a backward economy, or to estimate accurately the number of people whose removal from the areas would not lead to any reduction in agricultural output. In the complex and unfamiliar economic and social structure of many low income countries it may be difficult to appreciate the economic contribution that an apparently idle individual may be making to the family or community of which he/she is a member. The occupational composition of the labour force is meaningful and useful in economies in which labour is in bulk supply. In these economies the worker is engaged full time in his listed occupation, and also he does not normally change from one occupation to another. To describe a man as a machinist gives a useful picture of this type of contribution he can make to production and which, when employed, he does make. In a speciailsed economy the economic activities of a machinist outside his trade are likely to be small, and their neglect insignificant. However, the meaning and economic significance of occupational statistics are affected when occupational specilisation is imperfect and when large number of people can and do move easily from one type of activity to another. The imperfect specialisation of labour and, perhaps to a lesser extent, the greater occupational fluidity of labour in many low income countries, greatly affect the meaning and significance of occupational statistics.

The economic activity of many people in low income countries is better described as the performance of a number of different tasks than as the pursuit of a definite occupation. If an occupational census is taken, the so-called farmers would be listed as farmers, and the professional people in their respective professions. The fluidity of labour between certain occupations arises largely from the fact that only a low level of skill and capital is required in these occupations in low income countries. People can generally move with little sacrifice or difficulty within a wide range of occupations in acordance with changes in prospective net advantages. When the economy develops, occupational specialisation generally becomes more marked, and at the same time the fluidity of labour between occupations is reduced. Markets are extended with improvements in transport and increased purchasing power so that specialisation becomes more profitable. The proper distribution of labour in primary, secondary and tertiary categories of employment accelerates economic activities.

This as a policy measure should be followed by the Government of the concerned low income country. Thus, the above analysis shows that the rural industrialisation provides not only opportunities for employment to the needy but also plays important role in making the existing occupations viable in the rural sectors of the economy. □

*Asstt. Director of Employment Exchanges DGE&T, New Delhi.

The Concept and Strategy of Rural Development

Dr. S. C. Patnaik*

Rural development, integrated or otherwise, received varied emphasis under different five year plans of India. The special population/area target programmes such as IADP, HYVP, SFDA/MFAL, DPAP, CAD, ITDP and DDP have been implemented with the objective of carrying specific benefits of economic development to the rural poor. Their impact, however, on the socio-economic plight of rural population has so far been only marginal. The concept of rural development on the basis of which most of the special programmes have been formulated and the strategy followed raise many vital questions regarding their validity, in the light of socio-economic realities of the country, after about three decades of development planning.

The socio-economic picture of the country is often presented in terms of rural-urban dualism, based on functional division of space as between agricultural and manufacturing activities providing sustenance to large bulk of people. The rural activities, largely dominated by agriculture, are characterised by labour intensity and low productivity; whereas urban activities largely based on manufacturing are relatively capital intensive and have high productivity and wage employment. The two sector analysis often justifies urban led growth by drawing labour from low productivity activities to high productivity wage sector by expanding the manufacturing base. However, this approach has not yet been able to make a dent in changing the rural economic landscape.

The Rural Dualism

The rural sector in India is not confined to simple agricultural activities. The output of goods and services and employment which directly or indirectly depends on the use of land as a natural resource form a part of the rural sector. It has four identifiable groups, their relative importance varying from place to place and presenting a picture of complex economic relationship with one another. The groups are: (1) The owner cultivator producing marketable surplus; (2) Those tenants and labourers who are either landless or nearly so, but mainly connected with agriculture; (3) Those mainly engaged in village craft and household industries and services largely using locally available raw materials and mostly catering to local needs; and (4) Those engaged in trade, construction and other allied activities related to rural sector.

In the rural sector, although there is high degree of interdependence among those groups. There is great divergence of economic interest among them. The economic and social inpacts of Government policies and programmes on those groups often are not identical. Their access to various development and welfare measures of the Government are also unequal. It is, therefore, futile to consider rural development problems as homogeneous. It is more illuminating to look at the rural problems in terms of formal and informal sectors and articulate their linkages with one another. The rural formal sector mainly consists of owner cultivators producing marketable surplus generally characterised by large scale operations, capital intensive techniques, high income level and often protected by Government measures of incentives: subsidy, regulated supply of inputs, better marketing facilities of output and access to institutional financing. This is the rural elite group having access to the decision making power and enjoying the advantages of rural development programmes. The formal sector also includes a very small portion of rural industries and trade which are better organised and have access to the benefits of development programmes and amenable to enumeration, control and protection by the Government. The main handicap of those in the rural informal sector is their inaccessibility to land or to any other alternative means of production on their own right. Whatever marginal access they do have is under the effective control of the formal sector and the outcome of it is a sort of dependent and exploitative relationship between these two sectors.

The large and medium farmers who produce surplus for the market thrive on the exploitation of the tenants and labourers in the informal sector by purchasing their inputs at low prices. The affluent farmers having access to green revolution have succeeded in increasing their output, but at a terrible cost of displacing rural labour from their subsistence farming to a state of greater economic insecurity. Small farmers having little access to technological advantages of 'green revolution' and often in need of money, had to sell off their lands and drift to towns and cities to join the proletariat again in the 'informal sector', with only difference, i.e., in an urban infrastructural setting. The new buyers of land are now found as 'telephone farmers' in urban areas.

Farm income increasing on account of technological innovations, cannot necessarily improve the income of landless and small tenant farmers. Their inaccessibility to land or to any other alternative means of prdouction largely leaves them in a stage of economic deprivation with little opportunity to share development which the implementation of Government programmes brings forth. It is not so much the scarcity

*Department of Analytical & Applied Economics, Utkal University, Bhubaneswar.

of resources and development opportunity which are responsible for their economic plight; it is their deprivation of ownership of resources and lack of access to decision making which perpetuate them in the state of economic backwardness and poverty. The condition of those in small village crafts, household industries, trade or in other allied rural activities is also similar.

The dominant fact in the rural sector is, however; agriculture. Rural sector combines economic, demographic, technological and resource development problems into one. Its focal point being, people in varying physical environments of villages with unequal economic and social relationship it reflects dualism on space.

Urban Dualism

The urbanisation process in India lacks an adequate manufacturing basis. The high rate of natural growth of population, inaccessibility of rural labour to land, or to any other means of production and its displacement from agriculture by technological innovation causes large scale drift of rural labour to urban areas in search of livelihood and better economic opportunities The urban centres with their limited capital intensive manufacturing base absorbs a limited proportion of rural migrants having special skill and formal education into the wage sector. The remaining vast proportion of rural migrants failing to cross the threshold of the wage sector fall back on informal sector for some sort of livelihood, in the absence of any other opportunities other than open unemployment. The barrier which the rural migrants face in crossing into the wage sector is the outcome of the technology practised, actions of trade unions and Government's protective policies or all the three factors acting in collusion The consequence is rapid proliferation of the informal sector with the rural migrants pouring in, in contrast to the slow growing modern manufacturing and trading firms in the urban sector. It accentuates the economic dualism in Indian towns and cities. The informal sector problem in the urban area is largely a spillover of the rural problem in an urban infrastructural background. In economic terms, there is no difference between rural and urban economic dualism, except in their functional basis and ecological background.

Thus what is often considered as one of rural-urban economic equality in terms of two-sector model analysis is actually one of dualism within each sector and even in sub-sectors linked with one another by one of dependent, subordinate and exploitative relationship perpetuating poverty and economic backwardness on space spread all over the country, irrespective of urban and rural classification of areas.

The process of Indian economic development is divided into the distinct streams, moving at different speeds and sometimes in opposite directions, crossing each other over space. Such a process of development is inevitable in the pattern of present institutional set-up through which the plan is so far being implemented. The division of Indian society into a small number of 'haves' and a growing number of 'have-nots' spread all over the spatial structure of the country marked by small growth patches of land in a vast ocean of poverty, stagnation and deprivation is as much a consequence of an inequitable economic system largely depending on market forces, as the lack of a spatial framework in the development process, designed for the rapid transition of a predominantly backward country.

The concept to which the rural problem is fitted into necessitates regional development strategy directed through a multi-level spatial framework to bring about integration among economic activities in the formal and informal sectors both in rural and urban areas. The integration should result in the replacement of the prevailing dependent, subordinate and exploitative relationship between one sector and another by one of equal, supporting and reinforcing relationship. Such a change would help in the emergence of a more homogeneous national economic space, free from an exploitative relationship.

The main strategy, therefore, should be in bringing the means of production to those who are either deprived of, or inadequately endowed with it, and thereby ensuring their effective participation in economic activities. This can be done either by bringing the unemployed or underemployed labour into an expanded labour force as employees of firms or by enabling them to become productive as small farmers or artisans forging economic linkages with one another free from subordination and exploitation. The urban formal and informal sectors should be joined together in a new cooperative partnership on a much more diversified economic structure. The country's problem does not resolve into a mere rural urban migration issue. It is more a problem of poverty and low productivity of labour arising out of their economic deprivation spread all over the space both rural and urban but articulated in terms of informal and formal sectors in different environments. Therefore measures should include as a part of a common strategy to hold as much rural labour in productive employment in the rural environments, while at the same time converting the urban informal sector, the present Cinderalla of underemployment, into a major source of growth capable of absorbing more of rural migrants into productive opportunities and linking it with urban formal sector not in a dependent relationship but in an equal and naturally reinforcing one. The following may be the main planks of the regional strategy of development.

New strategy

Agriculture being the dominant sector, the main thrust of the regional strategy should be in that field. and reform is an integral part of regional strategy for agricultural development and rural change. The institutional framework should be changed to bring agriculture in line with its new role to raise production above subsistence level and support industrialisation programmes in the country. The land reform in its broadest meaning should fulfill the following objectives. :

(i) It can introduce change in the land and income distribution in such a manner that the accessibility of rural labour should be widened.

(ii) It can use land use pattern in such a manner that it can support a growing economy with food and fibre.

(iii) It can give human dignity to farmers and awaken them to new opportunities of socio-economic-technical innovations so much necessary for ensuring farming efficiency.

(iv) It can help in introducing settled agriculture where nomadic tribes are predominant or tribes practising shifting cultivation which brings ruin to the rural economy.

What is most basic in reform measures is that it should increase the accessibility of rural labour to land, which is the principal means of production in the rural sector. The technological innovations in many developing countries have increased the farm output considerably, but have failed to improve the income of landless labour and the small tenant farmers.

Another issue closely related to land reform measures is the optimum size of the farm unit : This arises out of an erroneous belief that economies of scale in agriculture are as important as in industry. It should be the policy to bring about a progressive shift of labour to non-agricultural activities. This shift to non-agricultural production, however, should be commensurate with the demand for labour outside the farming sector; otherwise, it would perpetuate urban unemployment and crises. It is imperative to preserve and nurture institutions and practices which can hold, labour in productive employment in rural environments, until there is demand for them in alternative productive activities.

With the increase in agricutural output, which land reform and rural development measures like irrigation and power may unleash, it may be difficult to control the temptation of introducing modern teachnology in farming with inevitable consequences of cutback on labour input.

The urban bias in investment should given place to a greater shift of emphasis on investment in the development of infrastructure, agro-industries and other allied economic activities which would contribute to hold rural labour to productive employment in rural environments such as dairying, fishing, forestry, etc.

Agriculture is a highly decentralised operation. Every average farmer operates under limitations of land, water, fertiliser, pesticides, credit, market and above all, information. Each of these is a separate operation, intimately associated with agricultural development. Agricultural development is often constrained by lack of coordination either in policy or in organisation in regard to these essential components

The development of hierarchical system of central places and market towns can bring about integration by forging economic links between different spatial levels and economic activities.

The informal sector of landless labour, small tenant farmers, artisans and village craftsmen and others who are engaged in petty trades or in allied services are the weakest links in the national production chain. If they are productively linked with development of agriculture and allied activities as well as rural industries, the present duality in agriculture will give place to an integrated development of the rural economic landscape. This requires a radical change in the policy of the Government and other rural development agencies. Their present discrimination against rural informal sector must end. It should be accepted as a target sector for a new package of preferences based on the prospects of future production, rather than their present position in rural asset distribution. However, the policy measures cannot be generalised for the whole of the nation of India's size They need to be tailored to the unique conditions of regions.

The implementation of regional strategy in the rural sector requires the supplementation of vertical power structure organised in terms of development departments by horizonal organisation of administration with specific focus on space at the village level. The nature and composition of villages present a variety of picture in the country. It calls for a diversified approach.

Despite efforts to hold rural labour in productive employment in rural areas, rural-urban drift of labour cannot completely be stopped, so long as surplus rural labour, rural-urban wage differences, and better urban facilities persist. With the expansion of formal education, rural people acquiring skill tend to migrate to urban areas in search of opportunities of employment. In democratic societies, it is difficult to introduce any harsh measures as it is done in some totalitarian countries It is, therefore, necessary to harness the dynamic potential of urban informal sector to absorb more of such migrants who cannot cross the threshold into the urban wage sector.

The wage earners in the formal sector being protected by the advantage of technology, Government legislation, administrative measures and trade union practices, generally earn more than the average wage earned by the vast majority of labour in the informal sector. An increase in their wage often worsens the distribution of income inducing shift in demand pattern away from informal sector. It further intensifies wage differentials perpetuating duality in urban manufacturing structure.

Therefore, the strategy should be directed to avoid such sharp wage difference between informal and formal sectors and deliberate efforts should be made for forging more of economic linkages between the two by ending Government's discrimination against the former. The extent and character of such linkages ofen depend on the rate of technical change which is related to the choice of the products. If Government take decisive measures to redirect final demand towards products of informal sector which are less capital and import intensive, it would generate more income and employment among small producers which tend to create an equalisation effect. There are many such commodities where such a shift of demand is possible such as consumer durables, small tools and engineering products and intermediate goods.

Often Government's policy deliberately contributes towards perpetuating duality in urban economy and between rural and urban economy in terms of tariff quota, protection for import substitution, import tax rebate on capital and intermediate goods, tax holidays, selective monetary controls, low interest rates, licensing and preferential contracts. This type of preferential treatment both in policy and operation is generally linked with the power structure controlling policy and administration. Unless the power structure is changed. it is operationally difficult to initiate a realistic change towards ending the present duality whether it is within rural and urban area and/or between those two. ☐

Groundnut Cultivation in India

D. V. Kasar and P. M. Kapase*

GROUNDNUT is a prominent crop in the oilseed economy of India. It contributes about 67 per cent of the total edible oil production in the country. It is predominantly a dry crop grown largely in kharif season in assured rainfall areas of Gujarat, Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu and Uttar Pradesh in the country. The crop has a great economic importance and growing demand on account of the multifarious uses in terms of kernels, oil and oilcake.

Though, India has a share of 31 per cent in the world output of groundnut, the supply and price of groundnut oil, have become a serious concern to the Government due to insignificant growth in output of the crop in the country. It is reported that per capita consumption of oils and fats in India is the lowest in the world. The estimated production of groundnut oil was 14.29 lakh tonnes in 1971-72 which remained stable at 14.00 lakh tonnes in 1978-79. As a result, the growing demand for this commodity in the country has resulted in serious shortage and soaring of its price during the recent years.

In view of the current situation explained above, the trends and growth rates in area, production and yield of groundnut for the last eighteen years in the country, we can suggest a few guidelines in formulating a suitable future policy for cultivation of this major oilseed crop in the country.

Production and Productivity

A comparative picture of area, production and yield/hectare of groundnut in major groundnut growing States (viz. Gujarat, Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu and Uttar Pradesh) as well as for the country is in the Table. It appears that the area under groundnut production in the country was 64.6 lakh hectares in 1960-61 which rose to 71.7 lakh hectares in 1977-78 i.e. by 11 per cent. The production of groundnut has increased from 48.12 lakh tonnes in 1960-61 to 60.69 lakh tonnes i.e. by 26.12 per cent in 1977-78. The yield of groundnut (shell) was 745 kg/hectare in 1960-61 which was increased 846 kg/hectare in 1977-78. It may be said that this increase in area, production and productivity of groundnut during the last 18 years is insignificant keeping in view the growing demand for groundnut and its products due to increase in population in the country.

On examination of change in area, production and productivity of groundnut in different States it is observed that the increase is conspicuous in Andhra Pradesh, Gujarat and Karnataka. In Uttar Pradesh, area and production of groundnut has increased by 54.50 and 40.0 per cent respectively but productivity has declined by about 10.0 per cent. Tamil Nadu also followed the same way. There is a decline in area, production and productivity of groundnut in Maharashtra.

Gujarat is leading in area and production of groundnut while Tamil Nadu stands first in the productivity. The productivity increased in Karnataka by about 33 per cent, it is low as compared to other States in the country. Maharashtra is the next State where the productivity of the crop is low. The linear growth rates in groundnut will depict the real change in the performance of crop during the whole period under study.

The area index of groundnut was 93.96 in 1960-61 which rose to 104.31 in 1977-78. It showed an increasing trend from 1960-61 to 1965-66 except for the year 1963-64 and attained the highest point (i.e. 111.92) in 1965-66. Subsequently, it showed sharp annual fluctuations except some regain during the period 1969-70 to 1971-72 in the country. The production index of groundnut showed significant increase from 97.08 in 1960-61 to 122.42 in 1977-78 with some annual up and down swings . The increase in production index was prominent during 1967-68, 1970-71, 1973-74 and 1975-76 while the decline was noticeable during 1965-66, 1968-69, 1972-73, 1974-75 and 1976-77. It was maximum (136.28) in 1975-76 and lowest (84.55) in 1972-73. The productivity index also characterised by violent annual fluctuations showing, with few exceptions, similar trend to that of production index of groundnut in the country. Thus, there was no specific trend observed in respect of area, production and productivity of groundnut during the period under study. The groundnut crop suffered more in terms of significant decline in production and productivity during the years viz., 1965-66, 1968-69, 1972-73, 1974-75 and 1976-77 when the monsoon was unfavourable for the growth of the crop. The prospects of the crop are highly dependent upon the performance of the monsoon since 93 per cent of the area under groundnut production is dry in the country.

Growth Rate

The growth rates in area, production and productivity of groundnut were positive and significant in Andhra Pradesh. The area under groundnut increased by 1.94 per cent per annum while production and

* Associate Professor and Assistant Professor, Department of Agricultural Economics, Mahatma Phule Krishi Vidapeeth, Rahuri Distt. Ahmednagar.

Per cent change in Area, Production and Yield of groundnut in major groundnut growing States in India during 1960-61 to 1977-78

Sr. No.	State	Area ('000 ha)			Production ('000 tonnes)			Yield (Kg/ha)		
		1960-61	*1977-78*	% change	*1960-61*	*1977-78*	% change	*1960-61*	*1977-78*	% change
1.	Gujarat	1770 (27.39)	1954 (27.23)	+10.39	1113 (23.13)	1723 (28.39)	+54.80	629	882	+40.22
2.	Andhra Pradesh	874 (13.52)	1066 (14.86)	+21.97	537 (11.16)	975 (16.07)	+81.56	613	915	+49.26
3.	Maharashtra	1102 (17.05)	848 (11.82)	—23 05	776 (16.13)	578 (9.52)	—25.51	705	682	—3.26
4.	Karnataka	858 (13.28)	994 (13.85)	+15 85	423 (8.79)	649 (10.69)	+53.43	492	653	+32.72
5.	Tamil Nadu	832 (12.87)	975 (13.59)	+17 19	1012 (21.03)	1110 (18.29)	+9.68	1216	1138	—6.41
6.	Uttar Pradesh	211 (3.26)	326 (4.54)	+54 50	175 (3.64)	245 (4.04)	+40.00	832	751	—9.73
7.	All India	6463 (100 0)	7175 (100.0)	+11.02	4812 (100.0)	6069 (100.0)	+26.12	745	846	+13.56

productivity of groundnut showed an increase of 3.24 and 1.35 per cent annum respectively in Andhra Pradesh. In Gujarat, the area under groundnut was found to be significantly declining by 1.04 per cent per annum. The production and productivity of the crop showed positive growth rates of 1.56 and 2 54 per cent per annum respectively in Gujarat.

The performance of the crop was pitiable in Maharashtra. The productivity was stagnant with marginal decline. The uncertainty of rains and relatively more comparative advantage of hybrid cereals and cotton varieties against this crop have reduced the area under groundnut in Gujarat and Maharashtra.

In Karnataka, the growth rates in area, production and productivity were positive but non-significant. The increase was marginal while the production showed an increase of 1.27 per cent per annum. The area increased by 0.93 per cent per annum in Tamil Nadu was significant at 5 per cent level. In Uttar Pradesh, it had an edge over significantly declining productivity of the crop showing marginal increase in production.

For the country as a whole, the growth rates in area, production and productivity of the crop were positive but non-significant except production. The production of groundnut in the country showed an increase of 1.04 per cent per annum which was significant at 10 per cent level. The growth in area and productivity of groundnut was marginal. This indicates that the performance of the crop was not satisfactory during the period from 1960-61 to 1977-78, even though some growth in output is observed, looking to the growing demand for this commodity in the country.

Conclusions

Area, production and productivity of groundnut did not show any specific trend but were characterised by annual fluctuations during the period from 1960-61 to 1977-78 in the country. The prospects of the crop are dependent upon the adequacy and regularity of monsson. The area under groundnut showed significant increase in Andhra Pradesh, Tamil Nadu and Uttar Pradesh while it showed decline in Maharashtra and Gujarat. The growth in production and productivity of the crop was positive in Andhra Pradesh, Gujarat and Karnataka while it was negative in Maharashtra and Tamil Nadu. The decline in productivity of the crop was significant in Uttar Pradesh and Tamil Nadu. On the whole, there was no significant increase in area and productivity of groundnut However, the output of the crop showed an increase of 1.03 per cent per annum during the last 18 years which may also be insignificant looking to the constant increasing demand for this commodity and its products.

There is a need to give an attention for scientific cultivation of this crop in the country. The high yielding varieties of groundnut viz., SB XI, JL-24, TMV-10, Punjab I etc., considering their suitabilities, need to be made popular among the cultivators along with the improved package of practices for increasing productivity of the crop. The possibilities of extension of cultivation of groundnut under irrigated conditions in kharif and summer season have to be explored in newly irrigated command areas. Favourable price policy has to be adopted to give an incentive to the growers for cultivation of this crop.

The implementation of a pilot project scheme involving integration of agricultural universities, State Government and Co-operative Banks for cultivation of this crop in major groundnut growing States as it was done in case of sugarcane and wheat in Maharashtra, will pave a way for boosting production of groundnut and solving the problem of shortage of edible oil in the country. □

Financing of Small Units In Malerkotla

T. L. Viveky*

THE contribution of the small scale industries to the country's domestic product and employment is substantial. But one of the major handicaps in developing the small units and transforming the existing ones from traditional to modern is the paucity of finance. The object of the present study is to analyse the capital structure of the selected units and to examine the role of various agencies in meeting the vital needs of finance of S.S.I. and as also to highlight the problems faced by the entrepreneurs. The present study is based on primary data. To evaluate the contribution of different sources (own/share capital, institutional and non-institutional assistance) the data pertaining to 22 small units have been collected. On the basis of investment in fixed assets (plant and machinery), the units are divided in six groups : upto Rs 10,000-'A' Rs. 10,000-20,000-'B', Rs. 20,000-50,000-'C', Rs. 50,000-1,00,000-'D', Rs. 1,00,000-2,00,000-'E' and above Rs. 2,00,000-'F'. The composition of productive capital consists of 12.96 per cent in fixed capital and 87.04 per cent in working capital.

While making investigation of the financing of small enterprises it was seen that contribution of owner's capital was very prominent among various sources of finance. Small units are forced to put excessive reliance on their own meagre resources and 87.67 per cent of the total capital employed came from entrepreneurs themselves. It was further seen that owner's capital is more prominent in the groups of lower capital size (A, B.). With the increase in capital size, and consequently the requirements of large quantum of finance, the proportionate contribution of owner's capital has gradually decline. It is 97.8 per cent of total capital employed in smallest capital size group 'A' and 36.6 per cent in highest capital size group 'F'. The role of owner's capital, industrywise, is more prominent in traditional industries.

Only 10.10 per cent of the total capital employed has been provided by institutional agencies. It has been seen that contribution of institutional agencies in extending credit stands at a very low level in groups of smaller capital size. Only industries like chill-rolls, cycle parts and sewing machine parts managed to get patronage from financial institutions.

Non-institutional agencies contributed 2.23 of the total capital employed. Only smaller units were provided this assistance. In groups of largest capital size 'E' and 'F' the contribution is almost nil. While examining the distribution of financial funds according to different agencies it can be said that out of 22 units which formed our sample frame only 14 units were provided financial assistance, 11 units were assisted by Banking Sector (7 units by "The Lead Bank" "State Bank of Patiala"), 4 units by other commercial Banks. 2 units each were assisted by the State Industry Department and Punjab State Small Industries Corporation, 7 units were assisted by non-institutional agencies and 8 units were not provided any assistance. One unit refused to take it. Some of these have taken loans from more than one source. The funds provided by Banks, PSSIC, Industry Department and Non-institutional sources are 73.4, 7.8, 0.8, 17.8 per cent respectively. The State Bank of Patiala, the Lead Bank, provided 36.56 per cent of total assistance, whereas it can be seen that the contribution of the State Industry Department is 0.8 per cent of total assistance which is very small. Three units from Industrial Estate, Malerkotla were also chosen which were provided 66.2 per cent of total assistance because of their links with instituitional agencies and status. It can be admitted that a "differential attitude" exists in the minds of institutional and non-institutional lenders tending to be more favourable to the units of largest size as 37 per cent of sample units with low capital got only 3.4 per cent of total assistance and 14 per cent of the largest units were provided 42.3 per cent of total assistance.

In spite of rapid expansion of industrial credit, a larger number of units are still out of its fold. These units have to encounter a number of problems while dealing with these agencies which may arise from lack of maintenance of proper accounts, reluctance of entrepreneurs to disclose information, delays in assessments and completing formalities and sanction of inadequate amount and so on. Because of these bottlenecks many small industrialists are forced to depend on non-institutional sources and borrow at high rates of interest.

It is imperative, therefore, that banking system should be properly geared to cater to the needs of small industrialists. Efficient administration, speedy disposal of applications, proper acquisition of expertise in appraising applications and adoption of need-based approach are some of the factors that merit attention in this context. On the part of units, there is need for exercising good financial discipline and instituting proper accounting system. □

*Teacher Fellow, Department of Economics, Punjabi University, Patiala.

Applied Nutrition Programme: An Evaluation

C. Yogananda Sastry*

APPLIED Nutrition Programme was introduced in the country during the year 1963 by the Government of India through an agreement with the international organizations F.A.O., W.H.O. and U.N.I.C.E.F.

Many evaluation studies were undertaken by various agencies in the past to get a feed-back about the effectiveness of the programme. Quite a few lapses and draw-backs were pointed out and some of the suggestions were not palatable to the administrators concerned.

Quite a few workshops and Seminars at various levels were organised to prepare models to overcome the bottlenecks. But most of the recommendations remained unheeded to. The most recent evaluation was jointly undertaken by the National Institute of Rural Development and National Institute of Nutrition in six states namely, Himachal Pradesh, Kerala, Maharashtra, Manipur, Orissa and Uttar Pradesh. The emphasis of the evaluation was on the qualitative accomplishment of the programme. To cite a few of the objectives : (i) to study the opinions and attitudes of the beneficiaries to ANP (Applied Nutrition Programme) to its components like production, consumption and education, (ii) perceived benefits derived by the people as a result of ANP in improving their health, nutrition and consumption of foods, (iii) the extent of participation of the community leaders and officials in the implementation of ANP and (iv) the extent of benefits derived from the training.

Information flow was found to be improperly organised from state down to the village level and vice versa. Effective monitoring of the programme has thus to be introduced at various levels and the concerned officials made responsible for this.

Unfortunately ANP does not have a single line of command and this is felt as an additional burden on the already overburdened block staff. It is imperative that right from the state down to the village level some officer should specifically be earmarked. Some of the states reported that quite a few of the posts allotted fo ANP were not filled. Mukhya Sevika single handed finds it difficult to look after ANP besides other functions assigned to her. Post operational blocks ge step child treatment and it is advisible to deploy som personnel to complete the unfinished task.

At the district level no one is responsible for th ANP activities. It is highly essential to create th post of a District Nutrition Projects Officer.

Village level institutions like Gram Panchayat Mahila Mandal, Youth Club are involved just fo the formality of it. They should be activised an motivated to involve to the maximum extent right fron the time of planning the schemes.

Criteria specified in the Master Plan of operation and that followed in the selection of the blocks an villages do not bear many similarities.

Uniform criteria followed in the selection of blocks villages and schemes to be implemented have not pro vided the opportunity of assessing the needs of th regions. Even the schemes planned were not base on the availability of facilities in the respective village and blocks at large. The best example for this is th pisciculture programmes drawn up on blanket basi for the entire country irrespective of the availability o water for fish to grow.

Though satisfaction was expressed by the official and beneficiaries regarding the supply of equipment in many a places it was observed that some of th

*Assistant Director (PCY), National Institute of Rural Development, Hyderabad.

A community garden in progress

items supplied were lying unused either at the block office or in a godown at the village. A general complaint was that the equipments were not suitable to the local needs or were not supplied on time.

Selection of the beneficiaries for the production programmes has been done in a way that most of them belonged to the higher socio-economic levels and thus the purpose of implementing these schemes got defeated. Most of the schemes bear an undelaying intention to improve the income levels and food consumption levels of the poor. These aspects need a careful scrutiny.

Aviculture (Poultry) was found not catching up in most states except in Kerala and the reasons mentioned pertained to the management problems like non-availability of veterinary assistance and high mortality rate of the exotic type of birds. In one of the states it was observed that those owning poultry were not beneficiaries in the strict sense but taken as beneficiaries as they already owned a unit.

For the community garden or kitchen garden in most cases the land used was the useless piece of land donated by somebody and it resulted in higher expenditure to improve the fertility of land. Another most important aspect is that the type of plants selected for these gardens were such that during the five years of operational period the plants begin to thrive and the programmes come to an end. The result is, the amounts earmarked for these gardens are spent but very little is realised from the gardens.

It would be necessary to ensure as such that the land made available by the village is of instant use. The crop management should be done in consultation with the subject—matter specialists and even the type of fruit bearing and other types of plants to be raised is so selected that they bear fruit within a short duration.

UNICEF made it very clear that ANP is purely a demonstration feeding programme. But it is more popularly known as a feeding programme without the education programme attached to it. It was noticed that the supplies for the feeding programmes were not properly looked after. It is necessary to ensure timely supplies and better storage facilities. Entrusting the job of supplies and storage to officials at state and district levels,is highly desirable.

Location of the building where demonstration feeding programmes take place namely the mahila mandals and child-care centres were said to be not convenient for the weaker section members. This needs to be looked into carefully.

Whatever be the constraints, it looks funny that in one of the blocks of Himachal Pradesh, Balwadis were wound up after six months in one village while in some other it was taken up for the remaining part of the year. The reasons given are that they wanted to spread the benefits of ANP to large areas.

Under the banner of ANP quite a few training programmes are organised for different levels of functionaries. But they employ very few trained persons. The course content of the training programmes should include the experiences gained in the implementation of the programmes also. The field workers must be

given a chance to discuss their field problems with higher officials. For this purpose peri-petatic training programme is desirable.

One of the causes for ANP to be ineffective could be its isolation from other related programmes intended for social development. Though it was emphasised in the Fifth Plan that Health, Family Planning and Nutrition should be integrated, not much has been done. The block plan approach initiated in 1974-75 did not seem to have made any impact on the implementation of ANP. Experience in studies of Area Planning had shown that integration of activities for social and agricultural development could best be achieved at the block level. Therefore ANP should be formed as a part and parcel of the social and economic activities of the block.

Coordination of activities between concerned departments like Health, Education, Agriculture, Animal Husbandry, Fisheries and Rural Development was found to be in bad health in many states. This also needs to be gone into thoroughly. □

Public Sector in India

(Contd. from page 15)

exchequer by Rs. 15,60 crore a year which is more than 15 percent of the present tax revenue of the Union Government and there would not have been any need at all to raise funds for public sector by way of additional taxation. In fact, this was actually what the planners had initially conceived of.

There is basically nothing wrong in the philosophy of envisaging economic growth through the public sector. What is wrong is the absence of proper appreciation and understanding on the part of the Government and management to run the public enterprise as a business venture. The lack of proper planning, operational efficiency, adequate control and management are the other important factors attributed for the present state of affairs of the public sector.

The various reports on the working of public sector projects have revealed that many projects took longer time than it was initially envisaged because of inadequate and poor project planning. It was found that the delays in implementing projects range from three to four years against their original estimate which necessiated the cost revision. For instance, according to the report of the Comptroller and Auditor General of 1977-78, the insufficient preparatory work has led to a four-fold increase in the estimated costs of the Salal Hydroelectric and Beas Projects. The Salal project estimate had increased from Rs. 55.15 crore in 1968 to Rs 222.15 crore in 1976. Similarly, the Beas estimate increased from Rs. 172.01 crore in 1959-61 to Rs. 715.31 crore in 1975.

Capacity utilisation is an important indicator of operational efficiency of manufacturing enterprises. Since in public sector undertakings the scale of investment is considerably large and the technology that they embody is highly capital-intensive, the rate of utilisation of capacity is a determining factor which significantly influence the profitability of the enterprise. The present low level of profit is primarily because of low rate of utilisation of capacity particularly in the areas where capital investment is large like in units producing steel, fertiliser, machinery and tools etc. In 1976-77, out of 117 units only in 17 units the capacity utilisation was less than 50 percent while the recent figures of 1977-78 show that every fifth public enterprise run at less than half of installed capacity. The prevalence of indiscipline and uncertainity on industrial front, power shortages and equipment break down etc. are the main reason for such low capacity utilisation.

The public sector managements are not vested with the power and authority needed for efficient working of the business and industrial enterprise and their effectiveness are undermined by excessive Government control and interference. For efficiency in business and industrial enterprises, it is essential that operational decisions should be prompt and taken by those who actually run the enterprise. Unfortunately the practice is such that the Government took the major operationol decisions and the management execute those decisions without realising their appropriateness for an industrial concern. In the absence of delegation of authority and flexibility in operation often the vital decisions are not taken at an appropriate time which causes enormous losses to the enterprise. Even within the enterprise itself, the delegation of authority from top management to lower cadre is not well-defined which is essential for efficiency in operation. The Government interference in the matter of selection and recruitment, transfer and promotion is the other constraint for efficient management of public undertakings.

Of course, one may safely remark that the performance of public sector is not very happy but this should not tempt to conclude that the concept of visualising the economic development through public sector should be given up by denationalising or closing down the units. The emergence of a strong public sector has not only provided the Government the necessary leverage to command and control the economy but serving as a powerful instrument to check the growth of monopoly and the concentration of economic power The consideration of setting-up of public enterprises in the underdeveloped areas accelerate the tempo of industrialisation in the region surroundings the projects and thus also facilitate in removing the regional disparities in economic development. Nay, a strong public sector can help to create the type of social order envisaged in the socialist pattern of society. □

BOOKS

Status of Children

Our Children by Tara Ali Baig, published by the Publications Division, Ministry of Information and Broadcasting, Government of India, Price Rs. 37.50

THE book 'Our Children' was the most apt publication in the International Year of the Child in 1979 by a person who has been working in the field of child welfare for such a long time. Smt. Tara Ali Baig has a long association with the cause of child welfare. She is President of the International Union for Child Welfare; President of SOS Children's Village, Member of the National Children's Board and other bodies concerned with the welfare of children.

The book is a comprehensive document on the status of children in India and in other countries of the world from time to time. It covers such diverse aspects and the problems of welfare of children as working child, the problem of child health, children in tribal areas, the special handicapped child etc.

With a person of less experience in the field of child welfare and less committed to the cause of children, the document would have been an unfocused one A perceptible focus runs through the book from the beginning to the end.

The book has a number of useful tables regarding child mortality in different states, targets and achievements under various national health programmes, national health hospitals etc. There is also a useful part of the document dwelling on the roles of voluntary organisations in the country.

This book is recommended for reading of all those who have welfare of children at their heart. This book is also an important one for decision makers and others in the country who have a role to play in shaping the policies.

R. K. Saha

Inflation

Inflation, Structural Change and External Equilibrium (1978, April), by Shanti Kumar Ghosh, published by The World Press Private Ltd., Calcutta Price Rs. 15/-, Pages 125.

THE book is an outcome of notes prepared by the author for a course of lectures at various centres of learning in Romania during April-May 1978. The Chapter on "Inflation in an Economy : Recent Indian Experience", makes a good introductory reading giving a simple exposition to some causes and cure to problems of inflation. While analysing the Indian experience, the author heavily depends on some outdated studies retaining the title, Recent". In this the author has missed the most important part of the recent Indian experience in inflation i.e. the period from 1972-73 to 1974-75. It is during this period that Indian has had the unprecedented inflation and imbalance in its economy. The appendix on "Problems of Inflation under Socialism" services as a good piece of information.

The second essay in the book on "Structural Analysis of Indian Economic Problems and Policies" draws some important and relevant conclusions.

"India and International Trade" is the subject of the third and last eassay. The whole analysis does not go beyond 1970-71. Thus, the most crucial period of Indian international trade, when a major headway was made in exports as well as in import substitution, remains untouched.

R. S. Mathur

Population Growth

Regional Population Growth—A Study of Rajasthan : B. C. Mehta, Research Books Jaipur, Pages 315, Price Rs. 60/- 1978

ONE of the most important problems which India faces today is how to control the increasing population. In our Five Year Plans, top priority has been given to the family planning programmes and the allocation of funds have been increased from plan to plan. However, in a democratic society, such as ours, people resist compulsion in the sphere of family regulation and voluntary restrictions of family-size depends upon many demographic and socio-economic conditions. In such a situation, population growth can only be understood in the context of the dynamics of the socio-economic development. In the earlier studies of population growth in India, census and field survey data have been profusely used to predict and depict grim prospects of India's economic future. In all such studies, little analytical skills have been used to understand the basic casual relationship In right earnest the present study is an attempt in the desired direction.

In this study the focus is on the analysis of the impact of regional differentials in socio-economic development on population dynamics of different districts and regions in the State of Rajasthan.

The findings of this study are very interesting and if looked into may result in the reorientation of our family planning programmes. Inspite of the large investment on family planning programmes, the situation in Rajasthan seems to be worse. Population has increased by 2 3 per cent per year during 1951—61 and during 1961—71 the rate of increase is even higher.

The study leads to the inevitable conclusion that if early brakes are not applied to this snowballing population, it will become impossible for the economy to get out of the low-equilibrium population trap, and instead of take-off, it will land crash. Finally all attempts at economic development will be abortive in the absence of successful programmes of family limitation.

Dr Mehta deserves all praise for his painstaking study of this magnitude and for giving a new direction to the family planning programmes in the context of economic development. There is no doubt that the study and the conclusions are immensely helpful to the policy makers, planners and the academicians.

R. K. Sinha

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litical Status of Women

Symbols of Power : Studies on the Political Status Women in India : Edited by Vina Mazumdar, Allied blishers Pvt. Ltd., New Delhi, 1979, pages 373. . 60.

THE book is a collection of individual papers by different authors on different aspects of political tus of women with special reference to their role in national politics. The Volume is the first in the ies—"Women in a Changing Society" brought out h the efforts of the ICSSR Research Unit on Women idies at the SNDT University.

Part I of the book discusses the role of women in tional politics in three independent papers, viz, tes for Women by Forbes; Women in Electoral ocess by Muni and Women Voters and the Midrm Poll (1971) by Upretti and Mathur. Although topics are general in nature, the papers bring out problems connected with the women franchise in dia in retrospect. Even though women, taking interest elections are influenced by men, once they bceome ucated and aware of their surroundings, they will ve a definite role to play in shaping the destiny of the untry.

Part II contains surveys of Gujarat, Maharashtra, d West Bengal on the theme by Shukla, Limaye and merjee respectively. Besides the three surveys, the st paper by Sirsikar in this part presents an overw on the subject and explains that the main purse of the three-state surveys was to test the influce of various factors on the politicization of women age, religion, caste, language, educational level and onomic status.

Part III is an attempt on the Profiles of Women in e State Politics with special reference to ten States. lthough dealt differently by ten different authors, e coverage of the problem is much wider and the ique character of a particular state is successfully ought out in this part.

Arranged meaningfully, the papers in the book are refully edited and convey, in a nutshell, the emerg-g role of women in Indian politics.

B.N. Sahay

Military Discipline For Students

The National Cadet Corps of India by Brig. Man Iohan Sharma, Published by Vision Books Private td., 36-C Connaught Place, New Delhi-110001 p. 215, Price Rs. 60/-.

THE National Cadet Corps was built up on the base of the University Training Corps in 1948 ith a view to imparting military discipline, qualities f leadership etc. to the youth. Periodical evaluation as resulted in an expansion of the NCC concept. It no longer thought of as a third or fourth line of efence. The emphasis has been shifted to character uilding, spirit of adventure, integration of diverse trains in the national fabric, cultivation of tolerance nd the like.

The book under review is a definitive work on the ubject. It is history, assessment, guide and hand ook, all rolled into one. The appendices at the end rovide useful information which cadets, teachers and aspirants would welcome. Brig Sharma has done well to delineate the concepts in the context of the Indian tradition and the peculiar nature of our national profile which has a pronounced streak of diversity. The NCC experience has thrown up certain interesting facts. We are told that as an aftermath of the war with China in 1962, NCC training was made compulsory for all college students. But this compulsion had to be cancelled a year or so later as it proved unpopular and ineffective. As the American youth's reaction to conscription has amply proved compulsion invariably provokes resistance. It is good that we learnt the lesson quite early.

At the same time, as a voluntary movement NCC is steadily gaining in popularity. The strength of the Corps has increased from the initial 38,305 to the present 13 lakhs. More students are desirous of joining the NCC than there are vacancies. Several firms in the country give preference to NCC-trained youth in their recruitment. The pace of its expansion, such as it is, is quite impressive. The girls were brought into the NCC in 1949. The Corps got an inter-Services look in 1950 when the Air Wing was added, followed by the Naval Wing in 1952. NCC expeditions and adventure courses have become all too common. The NCC element is visible in selected educational institutions all over the country not excluding Ladakh, Andamans and Lakshdwip. Yet, one has to concede that 13 lakhs is not a substantial precentage of the student population of our vast country. The movement deserves to become more ubiquitous so that the majority of students at some stage or other of their educational career, have the benefit of the good work the Corps is doing.

C. Mathew Chandy

Income For Women

Towards Self-Reliance: Income Generation for Women. Ed. by Jessie B. Tellis—Nayak and Selena Costa-Pinto, Divine World Publications, Indore, pages 101, Price Rs. 12.00

WOMEN and girls in India constitute almost half of the population. Indian civilization seems to have given woman a place in society where she could move toward greater freedom and achieve greater equality with men both within and outside the family, in the legal, sexual, social, occupational, economic, political, and cultural realms.

The book under review attempts to study a practical approach to income generating programmes whose aim is the emancipation and development of Indian women, particularly poor and rural women, through economic processes. In the existing socio-economic environment, income generation programmes assume a particular significance for women especially poor and rural women primarily because of their economic gains. These women workers are the sole bread winners of families struggling to subsist. In addition it is also accepted that such programmes provide opportunities for growth and development of self-reliance and leadership.

A number of needs for income generating activity can be identified from the papers and case studies in this book.

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A Sanctuary for Lion-tailed Monkey

Dr. G. S. Vijayalakshmi*

THE KALAKKADU sanctuary, with sunlight occasionally filtering through the towering evergreen trees to glitter the velvet carpet of wild leaves, presents a feast to the eye. Sprawling 22,40,000 hectares sanctuary located at an elevation of 1775 metres above the sea level in the Tirunelveli district of Tamil Nadu is the largest of its kind in ghats and one of the oldest existing rain forests.

Scanty sunshine renders the climate humid and soil moist enriching the virgin forest with a vast variety of flora and fauna. The green carpet on the Western Ghats abounds in pine trees belonging to the species Podocarpus utilis, locally referred to as "Narambili", a plant found exclusively in the Himalayas and nowhere else in south India.

The State Government declared the forest as a sanctuary to protect the rapidly vanishing "lion-tailed monkeys" of the Macaca silensis species. Apart from a host of birds and animals inhabiting Kalakkadu forest, the lion-tailed monkey (Macaca silensis) attracts the attention of every visitor. The rare animal belongs to short lived species often called a deme The shining black animal has a rich growth of hair on temples and cheeks in the form of mane hanging on the face. It always prefers to live in groups of about 15 animals. Captivity and mere separation will make them die. These lion-tailed monkeys are very timid, shy and perfectly adapted to arboreal mode of life. These are omnivorous having cheek pouches and a simple undivided stomach and eat insects, leaves and roots. They often inhabit in water-locked small hollows found in the most delicate branches of the trees. The presence of opposable toe is another characteristic which enables the monkey to cling on to the most delicate branches. They have their own language. The medicinal value of the flesh of these Parnamrigas for the human beings as detailed in our ancient texts are extremely informative and startling. The meat of macaques is highly priced as it stimulates vitality, is good for eyes, promotes flow of urine and faeces and is useful in certain respiratory diseases. It is also claimed to be both aphrodisiac and a cure for asthma.

A recent estimate puts its total population as not more than 400. Nearly 500-600 should be there for the entire species to survive. With poaching almost unchecked and continuing destruction of its habitat, it is on the verge of extinction. Unfortunately the recent proposal of Tamil Nadu Electricity Board to construct two dams, one at Sengaltheri and another at Nalumukku would ultimately result in extinction of macaque. The blasting and vehicular movement will constitute a serious disturbance to these extremtly shy creatures.

The people of Tirunelveli are legitimately proud of the Kalakkadu forest with its infinite variety of flora and fauna especially the macaques. ☐

*Research Associate, Shri Parasakti College for Women, Courtallam, Tamil Nadu.

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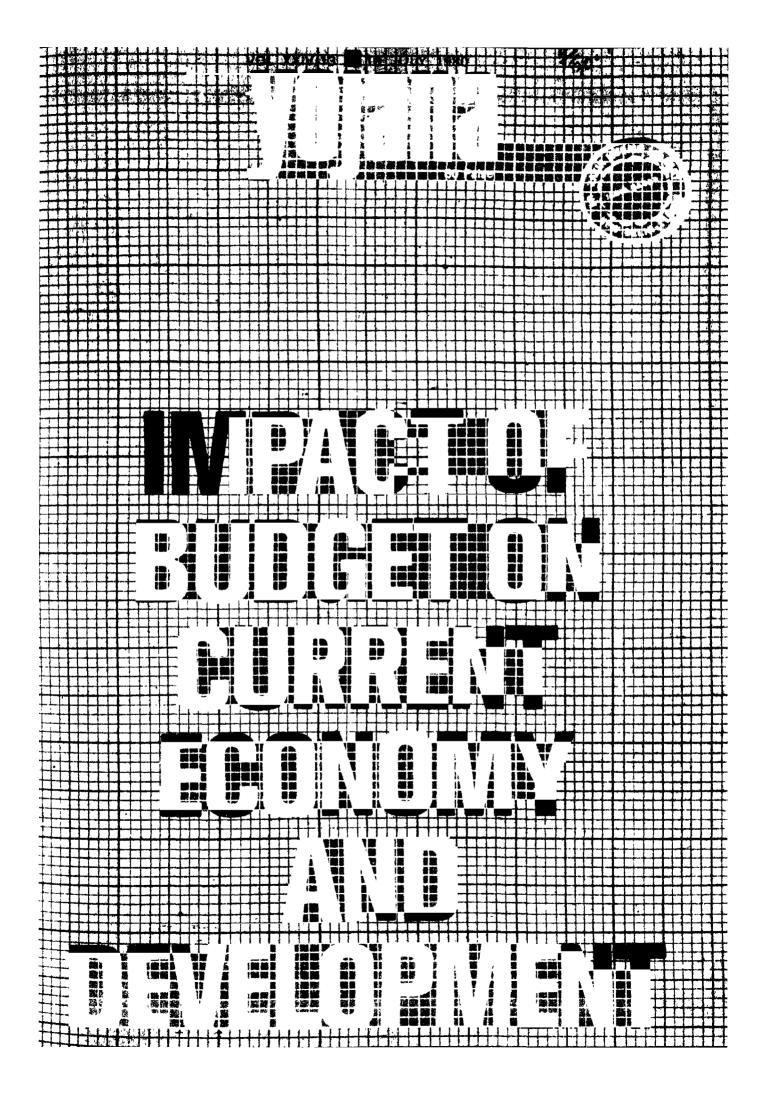
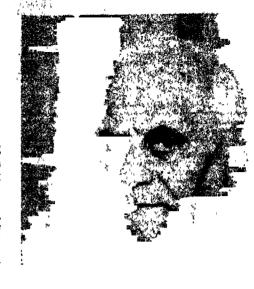
IMPACT OF
BUDGET ON
CURRENT
ECONOMY
AND
DEVELOPMENT

Shri V. V. Giri

(10-8-1894—24-6-1980)

Deputy Chairman and Members of the Planning Commission have passed the following resolution on the sad demise of Shri V. V. Giri, former President of India.

"The Members of the Planning Commission express their profound sense of grief at the passing away of Shri V. V. Giri who occupied with dignity and distinction the position of Rashtrapati at a critical time in our Nation's history. In his death the country has lost a distinguished son who was passionately devoted to the cause of creating a happy India.

The Members of the Commission convey their heart-felt condolences to the members of the bereaved family and pray that they may be given the strength to bear this irreparable loss."

Shri Sanjay Gandhi, M.P.

(14-12-1946—23-6-1980)

Deputy Chairman and Members of the Planning Commission have passed the following resolution on the sad demise of Shri Sanjay Gandhi :

"The Members of the Planning Commission express their profound sense of grief at the sad and untimely death of Shri Sanjay Gandhi. In his death, the country has lost a youthful leader of tremendous courage, vision and immense promise who had already made a powerful impact on the country's political life.

The Members of the Commission convey their heart-felt condolences to the Prime Minister Shrimati Indira Gandhi and other members of the bereaved family May God give them the strength to bear this irreparable loss."

YOJANA

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Editorial

On with the pla

THE present government has [illegible] difficulties, like the widespread drought, 20 per cent inflation in one year, a decline of 3 per cent in GNP, critical shortfalls in the infrastructure sectors of power, transport and coal and fall in external trade. Viewed against this background the final Budget for 1980-81 presented by the new Finance Minister seems to be the best possible one. It provides for tax concessions to the tune of Rs. 42 crores which give relief to the poor and middle classes who have been hard pressed by the price rise. Concessions have also been allowed to industry—especially small-scale industry—so as to encourage fresh investments and growth The Budget, at the same time, seeks to mobilise an impressive figure of resources about Rs. 516 crore in a full year in order to meet the increased cost of public administration and developmental work in the first year of the Sixth Plan. The new levies on the industrial sectors are mainly intended for checking tax evasion and excess money supply Even after the fresh levies a deficit of Rs. 1417 crore has been left uncovered. The outlay on the annual Plan for 1980-81 has been raised by 16 6 per cent as compared to the last year. Agriculture and Irrigation get a major share in the outlay. Sizeable allocations have also been made for the welfare of the weaker sections and for an expanded programme for rural employment.

Though the new deficit is not much, coming as an addition to the deficit of Rs. 6000 crore of the past three years, it can add to the inflation Further the sharp increase in the petroleum prices and railway fare and freight together with Rs. 2304 crore announced before the Budget, will raise prices across the board. Judging from last year's experience, the outlay as such does not ensure development unless the amount is properly utilised Similarly, past experience makes it somewhat doubtful whether the public sector can generate increased surplus expected of it. Another lesson from the past is that the special job schemes unrelated to development and without strict supervision lead to the wasting away of resources.

The present government with its massive mandate, is best fitted to solve some of our nagging economic problems. One of them is to change the structure of direct and indirect taxes in the light of the reports of two expert committees. Another is to penalise those who are responsible for the under-utilisation of production capacity with a view to profit from shortages. The public sector undertakings should be made to earn profit within a specific period, failing which they should be converted into public limited companies. The existing black money should be eradicated and loop-holes for its fresh generation should be plugged.

The recent moves of the government to make up the infrastructure shortfalls, and to tone up the public sector alongwith the normal monsoons augur well for the future. If there is domestic and international peace and if the OPEC does not further increase the oil prices, we can resume the task of growth with stability. Our Budget is not only the yearly revenue-expenditure scheme, but a provider for the annual development plan as part of the five year plan. Only by executing the Plan with vigour we can reduce our poverty. So on with the job of the Sixth Plan. □

Special Article

Budget and the Plan

K. Rangachari*

THE Budget for 1980-81 presented late in June (instead of in February as usual) has helped the Government to give a better start to the Sixth Plan in its first year than it seemed possible when the interim Budget was presented. With the negative growth rate in national income of about 3 per cent in 1979-80 and the possibility of domestic savings having declined owing to the double digit inflation last year, the outlook was not indeed propitious. The Union Finance Minister has been able to announce that the Plan outlay in the current year will be raised to Rs. 14,593 crores, involving a step-up of 16 6 per cent over that of last year. It has of course to be remembered that this is more or less equal to the rate of inflation, which means that, in real terms there will be no increase However, it will be unwise to go entirely by the volume of outlay to the exclusion of its character and the effectiveness with which Plan funds are deployed.

Last year in spite of a Plan outlay of Rs. 12,511 crores, there was a decline in growth owing to the drought in agriculture and the severe infrastructure crisis which affected the levels of industrial activity. There is basis for some caution optimism this year on both aspects. To a large extent political uncertainties aggravated the setbacks to the economy last year, there will now be assurance that the administration can take effective steps to correct imbalances and succeed in the basic task of economic stabilisation essential for the pursuit of the objectives of the Sixth Plan in the succeeding four years. The Fifth Plan had also suffered a similarly severe setback in its first year (1974-75) because of inflation and rise in international oil prices, and some of the firm measures then taken had helped to stabilise the economy The difference now is that there is greater assurance on the food front and to some extent even in respect of foreign exchange reserves, though these are not likely to last long unless our exports and other earnings of foreign exchange improve and we are able to increase domestic production of certain items which are now being imported. The advantages, such as they are, have to be put to the best use within the time available if the Government should succeed in achieving planned growth.

*Veteran Journalist.

While the broad order of priorities in the allocation of Plan resources do not change very much from Plan to Plan because of the importance of execution of ongoing projects in irrigation, power, transport, steel, coal and oil sectors, some limited area of choice is available between new investment and improvement of existing installations and fuller utilisation of capacity.

It has been obvious in recent times that both for fighting inflation and for promoting growth, the public sector, which now occupies most of the Commanding Heights of the economy, should show a much better level of performance than it has demonstrated so far With the increase in medium and minor irrigation, extension of rural electrification and energisation of pump-sets, the importance of power for agriculture is as great as its need for industry. The Budget can only allocate the required resources for these sectors for expanding coal raisings and their movement, and the efficient working of thermal stations. This it has done within the overall limitation of resources. Similarly, the Railway Budget, which is inextricably linked with the General Budget, has increased Plan outlay by Rs 110 crores for expanding rolling stock and strengthening the line capacity works so as to enable movement of about 20 million tonnes more of goods traffic than was carried last year All these fall within the right priorities. While one may wish that it were possible to further expand the budgetary allocations in these directions, it is necessary to bear in mind that any financing of an inflationary character should be scrupulously avoided at this stage since it may defeat the objective of price stability and reduce the real resources which have to be secured with the help of the additional funds.

A good monsoon can make a radical change in the situation, since not only can agricultural production recover to the earlier levels of 1977-78, but the hydel reservoirs also can generate more power and come to the rescue of the hard pressed thermal power stations It is expected that on the three most vulnerable areas of consumer goods, oilseeds, sugar and pulses, the revival of prosperity in agriculture can make a significant contribution to holding the cost of living In this sense the Budget needs substantial external support from the weather for the fulfilment of its objectives A greater deal will also depend on the support given by the administration at many levels both at the Centre and in the States, to provide inputs to the farmer in time, for better working of the State electricity systems and the promotion of a climate of industrial peace to prevent the disruption of production by strikes and lockouts.

Private Sector

This brings us to the equally important problem of the efficient working of the private sector in industry Apart from the automatic improvement likely to result from the better supply of coal, power and transport, and a reduction in the man-days lost through work stoppages, there is need to aim at a higher level of investment. For this purpose, the Finance Minister has offered some fiscal and other incentives. The first is the modification of the rigours of the convertibility clause in respect of loans given by the public sector financial institutions for long term investment. Managements will have less fear about the Government acquiring control over their companies as a consequence

of loan assistance received from these bodies. A second concession is the additional depreciation of 50 per cent in the year of installation of new equipment, which can make up at least a part of the higher costs of fixed capital investment. A third is the continuation of the tax holiday, in a form different from the one hitherto prevailing, for new industries started during the Sixth Plan period. By refraining from raising excise duties on certain articles of essential consumption, the Finance Minister may have also helped to encourage optimistic expectations about the growth of demand, at a time when industrialists have been worried about the likelihood of recessionary trends in certain industries falling in the semi-luxury or less essential categories. Against these advantages and the reduction in the marginal rate of income taxes, higher wealth tax exemption and incentives for approved savings, we have to take note of the revival of the interest tax which will raise interest rates on both short term and long term capital. The continued credit squeeze, the absence of any significant gestures for the reduction of the burden of indirect taxation on investment goods and inputs as recommended by the Jha Committee and also, the proposal to give retrospective effect to certain tax changes for the corporate sector have all disturbed private sector managements. They will affect investment intentions since corporate managements cannot make any firm assumptions about the quantum of incentives they will get if the Government subsequently alters the principles on which they are determined.

Welfare Schemes

A notable, though not a novel, feature of the Plan outlays in the Budget is the provision made for employment schemes, scheduled castes and tribes, house sites for the landless and measures for drinking water supply. In all these cases, success depends on the effectiveness with which State Governments are able to execute schemes and bring them into operation. Earlier Plans on these matters have suffered not so much from a lack of funds but lack of a proper system of implementation. Most of the funds were spent on establishment charges and vehicles for the officials, while the benefits percolating to the target groups were minimal The actual estimates of employment now offered in the Budget need not be taken as firm. However, the allocations give a fresh opportunity for revising the rural manpower schemes and finding appropriate new strategies suited to the different rural and tribal areas. Food for Work and employment paid in cash can both be linked to creation of rural assets of a permanent or semi-permanent nature, which fall within the scope of the Sixth Plan.

The Sixth Plan is still in the process of formulation and the steps taken during this year and the experience gained will decide the final framework of action. While growth has to be maintained since it holds the key to the achievement of all other desirable objectives, it is clear that special attention has to be given for providing more employment opportunities, especially in the rural areas, and that the programme for minimum standards of living should be given priority if we desire to mitigate the harsh effects of poverty and destitution. Any achievements in these directions can only be reckoned over a period of years and one Budget like that now presented can mark one step forward. □

Tax Reliefs

— *Excise duty on the common varieties of toilet soaps, electric bulbs, pressure cookers, tooth paste and TV sets reduced.*
— *Excise duty exempted on the controlled cloth, cotton hosiery, cycles and sewing machines etc.*
— *Exemption limits in personal income-tax raised from Rs. 10,000 to Rs. 12,000.*
— *Seven year tax holiday for new industrial undertakings, ships, and hotels, on one quarters of their profits.*
— *Wealth tax on the agricultural property abolished.*
— *No restrictions on publicity expenditures of companies.*
— *Surcharge on the income-tax, for non-corporate taxpayers, reduced from 20 per cent to 10 per cent.*
— *Exemption limits for wealth tax raised from Rs. one lakh to Rs. 1.5 lakh and complete exemption on the compulsory deposit accounts upto Rs. 1.5 lakh.*
— *Licence fee on two band transistors and radios abolished.*
— *Standard deduction in case of pensioners allowed, and twenty-five per cent of the professional income of the sportsmen and athletes derived from abroad exempted from tax.*
— *Import duty on electric machinery items including printing machinery reduced.*
— *Duty on ocean going vessels exempted and on computers and air conditioners reduced.*
— *Concession in excise on paper and allied products manufactured by small units.*
— *A big excise exemption on diesel engines for cars and combustion engines for cycle rickshaws.*

New Taxes

— *Excise duty on synthetic rubber, soda ash, caustic soda, starch, acids etc., increased.*
— *Special excise duty on cigarettes.*
— *Private discretionary trusts tightened and more Income-tax and wealth-tax levied on them.*
— *Tax exemptions to H.U.F reduced and rate of income tax raised.*
— *Import duty on passenger's baggage raised from 120 per cent to 150 per cent and, on audio frequency amplifiers and unexposed cine films also increased.*
— *Price of postal envelopes raised from 30 to 35 paise, of parcel from Rs. 1.50 to Rs. 2.00 per 500 grams.*
— *Rate of local telephone calls beyond 5000 a quarter raised from 40 paise to 50 paise. The rate of telephone installation and shifting also increased.*

Special Article

Union Budget : An Economic Analysis

Dr. B. M. Bhatia*

THE Union Budget for 1980-81 is in a class by itself. It defies description in terms of fiscal theory as well as policy behind it. It also belies all expectations of speculators and apprehensions of the consumer about hike in excise duties on commodities of everyday use and on durables like refrigerators, TV sets, pressure cookers, etc. The traders and shopkeepers who hoarded supplies of manufactured goods in expectation of making a quick buck have been thoroughly disappointed for they may have now to sell the stocks at prices that prevailed before the budget if not at lower prices. Nobody can have any sympathy with their present plight. The budget, thus deals a heavy psychological blow to the practice of pre-budget hoarding and cornering of supplies of essential commodities and serves as a deterrent to similar action on the part of traders in future.

The two immediate economic problems to the solution of which the Finance Minister had to address himself are inflation and the sagging growth rate which was a negative about 3 per cent last year The acid test for Shri Venkataraman's budget is how far the content of its fiscal policy and philosophy contributes to the solution of country's these two basic problems.

Inflation

Let us take inflation first. Over the last 25 years this has remained an endemic problem of Indian economy. Its roots lie in the development strategy and the system of public finance that we adopted from the beginning of Second Five Year Plan. That Plan was over-ambitious, based more on needs than on the resources available for investment in development activity and effort. The emphasis was on development of heavy industry and laying down of infrastructure for modernization and rapid industrialization. It was felt that Plan outlay on projects of this nature was productive investment and that even if one were to resort to deficit financing to finance these projects, this would not lead to inflation because increase in money incomes generated in payment of wages, etc., would be more than offset by increase in commodity production resulting from new plants and industrial units. The fact that heavy and basic industry plants as also big construction works like those of irrigation and power have a long gestation period and that the interval between increase of money incomes and rise in output from new investments was bound to be filled with generation of inflationary pressures in the economy, was conveniently forgotten. These pressures made their appearance in the second Plan period itself but their full impact came to be felt in the Third Plan period. Inflation forced a three-year Plan holiday on the country from 1966 to 1969. These three years saw some respite from inflation, the wholesale prices index (base 1960-61=100) risnig from 158.9 in the last week of 1966-67 to 165.1 in the last week of 1968-69. The Fourth Plan was launched in April 1969 and with it inflation returned with greater fury. The price index went up from 165.1 in the last week of March 1969 to 192.3 at the end of third year of the Plan and 285 in the last week of March 1974 when the Plan ended. The first year of the Fifth Plan was even worse in respect of inflationary experience with the wholesale price index touching the peak of 330 (1960-61=100) in September 1974. Thereafter, as a result of stringent anti-inflationary measures taken in July 1974, the price index began to decline and stood at 308 when Emergency was imposed. Taking 1970-71 as the base, the price index stood at 158 at the end of March 1974, 173.9 at the end of March 1975, and 162.6 in March 1976. There was again a spurt in prices with the index rising to 181.1 in March 1977.

Over the next two years, which for all practical purposes were again years of Plan holiday, prices remained relatively stable. However, the huge budgetary deficits of Rs. 1134 crores in 1977-78 and Rs. 1382 crores in 1978-79 had led to 14.7 per cent increase in money supply in 1977-78 and 16 per cent in 1978-79. Both these were good crop years and supply situation in respect of foodgrains and other agricultural produces was easy. This, together with comfortable foreign exchange reserve position enabled the Janata government to exercise skillful supply management and keep prices stable. Choudhary Charan Singh's disastrous budget for 1979-80 which left an uncovered deficit of Rs. 1355 crores, that in final count has turned out to be a whopping Rs. 2700 crores, ignited the fires of inflation, the potential for which had already been built in the first two years of Janata's rule. The immediate cause of inflation was the heavy commodity taxation that the budget proposed. This was compounded by the drought that followed in July, the deterioration in the working of infrastructures and consequent critical shortages of coal, power supply, railway transport, cement and steel; the worsening of industrial relations; and the coming into full play of the black money operations which had remained dormant over the preceding two years.

The trends set into motion by the last year's budget are still with us without showing the least abatement. The wisdom of leaving an uncovered deficit of Rs. 1417 crores in this background, as Shri Venkataraman's Budget does, therefore, is open to question. It is instructive to note that without taking into consideration the proposed additional tax yield to the

*Principal, Hindu College, Delhi

Centre tax during the current year of Rs. 233 crores, the deficit on revenue account alone comes to Rs. 1177 crores. Deficit financing began as an instrument of raising resources for financing productive Plan expenditure. It has now deteriorated into a handy instrument of financing public sector current consumption expenditure. This is a dangerous path to tread. We seem to have learnt nothing from our past experience of the last twenty-five years. Unless he has something in mind like cutting down drastically later on, the expenditure on various subsidies like food, fertilizers and export promotion and raising of administered prices of public sector products like coal, electricity and steel with a view to eliminating altogether the uncovered budgetary deficit, he might have, though unwittingly, set the economy on a perilous run-away inflationary path. Even otherwise, to draw 7 per cent of the total budgetary resources from deficit finance as the present Budget proposes to do, especially at a time when the growth rate of the economy is zero or negative, cannot be regarded prudent If the moonsoons this year are good, agricultural production may look up and a part of the excess money supply generated by deficit financing of the proposed order may be absorbed with the result that its full inflationary impact may not be felt immediately But there can be little doubt that a further inflationary potential in the economy has been created by the present Budget which can prove dangerous to future stability and economic progress of the country. At the end of his Budget speech, the Finance Minister claimed : "My Budget represents a modest contribution to the process of restoring the country's economy to the path of stability, growth and social justice." One wonders whether in making that claim he took into consideration the dangerous potentialities of the heavy doze of deficit finance he had administered in a situation that is already highly explosive.

Public Expenditure

But did he have any choice ? Could he do anything to avoid that deficit ? The Economic Survey for 1979-80 had indicated that the scope for further taxation to obtain necessary revenues to meet mounting public expenditure was "rather limited". There can be little disagreement with that . The answer to the growing Budget deficits is to be found, as even advanced countries like U.K. and U.S.A. are discovering belatedly, in cutting down of public expenditure to bring it in line with the available budgetary resources. There is an urgent need to start the process of examining ways and means to reduce the public expenditure from the present bloated levels to manageable limits Let us in that connection have a look at the main heads of expenditure of the Union Government The following table gives main items of expenditure at a galance :

TABLE

Public Expenditure in (Crores)

	1979-80 Budget	1979-80 Revised	1980-81 Budget	
	Revenue Disbursement			
General Services	3207	3260	3846	
Defence Services	2755	3010	3273	
Social & Community Services	819	792	890	
Economic Services	2425	2449	2449	
Grants in aid to States	2190	2537	2852	
Total Revenue Disbursements	11396	12048	13310	
Revenue Surplus+ or Deficit—	—214	—871	=1177	
			+223	(effect of Budget proposals.)
Capital Disbursements				
General Services	52	47	49	
Defence Services	295	263	327	
Social & Community Services	149	108	165	
Economic Services	2026	2091	2466	
Loans & Advances	4608	4767	5150	
Total—Capital Dis bursements	7130	7276	8157	
Total Disbursements	18526	19324	21467	
Total Receipts	**17144**	**16624**	**19827**	
			+223	(Effect of Budget proposals).
Overall Budget Deficit	**1382**	**2700**	**1640**	
			—223	
			1417	

The first point to be noted in the above table is the steep rise in the revenue expenditure from the revised estimates for 1979-80 of Rs. 12048 crores to budgeted amount for 1980-81 of Rs. 13310 crores, which marks an increase of Rs. 1262 crores or Rs. 85 crores more than the total revenue deficit at the pre-Budget level of taxation. Was this profligacy in non-development expenditure necessarily called for at a time when the country is suffering from a severe degree of inflation and the urgent need is for utmost economy in public expenditure? It is not necessary to go into details of step-up of public expenditure under various heads. The major increase is under the head 'General Services' that include 'General Administration" which sub-head shows an increase of Rs. 197 crores out of the total increase of Rs. 600 crores under the main head. Defence Services account for another Rs. 272 crores of increased budgetary provision over the revised estimates for the last year. The rest of the increase is under grants to the States and Union Territories. An Expenditure Commission was appointed last year to recommend measures for pruning public expenditure It was rightly abolished by the present government as soon as it assumed office. As constituted at the time the Commission itself was a sheer waste of public money because it could not have served any useful purpose. The choice of its members was based more on political considerations than on their merit to do the required job Nobody would, therefore, blame the present government for its decision to wind up the Commission However, the urgency of the subject is not only there but is even greater today. The need for a drastic pruning of public expenditure was never so great as it is at present. We have reached a breaking point in the matter. In 1973, Prime Minister Smt Indira Gandhi had stated that the country needed a financial wizard who would bring public expenditure in line with the available revenue resources so that deficit finance and consequent inflation were avoided. That plea holds good even more strongly today than it was seven years ago.

Subsidy Drain

In this connection, it will be pertinent to raise the question of subsidies from the Central Exchequer under various heads which since 1973, have emerged as a major drain on the public exchequer in the country The subsidies are spread under different heads of public expenditure and are not available at one place in the Budget papers. It is difficult, therefore, to make an absolutely exact estimate of the total expenditure on subsidies But at a rough estimate, the Budget disbursement on subsidies comes to Rs. 1830 crores of which Rs. 600 crores is accounted for subsidy to Food Corporation of India to make up the difference between the purchase cost of foodgrains and the sales returns, Rs. 393 crores by export subsidies and promotion, and Rs. 400 crores on subsidization of production and sales of fertilizers. The consumer subsidy on wheat works at Rs. 33.5 per quintal and on rice Rs. 26.6 per quintal. The distribution cost in respect of both the grains comes to Rs. 23.41 per quintal It is time we got a detailed cost-benefit analysis of our current food policy made to assess the social advantage of that policy. The subsidy of Rs. 600 crores we are paying to the Food Corporation of India is the administrative cost of that policy. Whom is this huge annual expenditure of Rs. 600 crores benefiting : the community or the Food Corporation of India people ? In any case, it is not the poor who are benefiting from the present system of public distribution of foodgrains : they are paying more than the procurement price at which the Government gets the supplies from the farmer. Private trade would not have the margin of profit in ordinary times of a magnitude that would make foodgrains much dearer to the consumer than the price he pays now at the public distribution shops. What the country requires under the altered circumstances of food supply is a proper policy on maintenance and management of food stocks and not running of 2,50,000 retail shops for public distribution. A considerable saving in public expenditure can be made by a reform of food policy; a change in which, in any case, is already long overdue.

Similarly, export subsidies call for a review at the present moment. They were devised at a time when there was acute shortage of foreign exchange in the country. That position fortunately is no more there. Besides, the composition of export trade has undergone a radical change. Machinery and machine-tools, electrical goods and appliances, engineering goods of various kinds and other manufactures commonly associated with industrialized countries have come to occupy an important position in our export trade What is required to push up exports of these items is improvement of their competitiveness in world markets, greater attention to maintenance of high standards of quality of the products and strict adherence to the agreed delivery schedules by the exporters. Export subsidies obviously cannot be substitutes for these much-needed improvements in industrial production and trading practices and system in the country. Again, there is a great scope for expanding export of agricultural produce, particularly cereals over the next few years. Only this single item of export can pay for a large part of the mounting bill on imports of crude and petroleum products. The country can easily plan for an annual export of five million tonnes of cereals which amount can be obtained by a little more attention to increase the productivity of the small and marginal farmers as also of the other farmers in States which have yet not been touched by the green revolution. By doing so, we will be solving not only our balance of payment problem but also help in mitigating to some extent, the problems of rural poverty and unemployment.

That brings us to the question of subsidies in fertilizers. There is no case for continuing those subsidies in their present form. A plausible case for subsidies on fertilizers can be made if a dual pricing system in the supply of fertilizers were introduced with the big and viable farmers getting their supplies at the market rates and small and marginal farmers at subsidized reduced prices. The benefit of subsidies should go to small and marginal farmers or to their cooperatives only, while the big farmer who can afford to pay the market price should be made to pay that price. This would mean considerable saving in expenditure under this head to the exchequer.

Annual Plan Outlay

The Plan Budget for 1980-81 has been put at Rs. 7340 crores, compared to the last year Budget of Rs. 6412 crores. The provision made in the Interim Budget presented in March last was Rs. 6573 crores or Rs. 767 crores less than that what the full Budget now provides. The uncovered deficit in the interim Budget, it may be recalled, was Rs. 1235 crores whereas now it is put at Rs. 1640 crores at the existing rates of taxation.

All the Plan outlay is not productive expenditure or capital investment. A proportion of it is like ordinary consumption or non-development expenditure though for accounting purposes it is classed as productive or developmental expenditure. Sectoral distribution of Central Government Plan outlay by heads of development is as follows :

inflation is concerned. We are left, therefore, only with monetary policy to deal with inflation. But only a week before presentation of the Budget, the Economic Survey had stated that : "In general the task of aggregate demand management should be shared between fiscal and monetary policy and not fall exclusively on the latter.", and that "monetary restraints in 1980-81 will depend crucially upon the ability to keep deficit financing under control." In framing the Budget this salutary principle seems to have been completely forgotten.

TABLE

(in crores of Rupees)

Head	Budget Estimates 1979-80	Revised Estimates 1979-80	Budget Estimates for 1980-81
1. General Services	22.57	20.58	19.24
2. Social and Community Services	797.23	646.95	795.53
3. General Economic Services	95.10	78.66	96.40
4. Agriculture and allied Services	898.43	884.83	948.96
5. Industry and Minerals	1718.63	1589.87	1955.50
6. Water & Power Development	374.87	350.02	503.01
7. Transfport and Communications	900.95	808.27	1003.20
Grand Total	**4807.78**	**4379.18**	**5321.84**

The difference of Rs. 2018 crores between the total Plan outlay of Rs. 7340 crores and the total Budget provision of Rs. 5322 crores is to be met by extra budgetary resources for the Central Plan. These mainly consist of the internal resources that public undertakings generate to finance their own development and the loans that they may raise from financial institutions and deposits from public that public sector corporations are going to be permitted to accept, like the private corporations.

Expenditure under the first three heads in the Table amounting to Rs. 911.17 crores is of administrative and social welfare nature and cannot strictly be called developmental. The same is the case with expenditure under certain sub-heads spread over the four other main heads in the Table. That comes to Rs. 795.53 crores. The total works out at Rs. 1707.7 crores which is 32 per cent of the Central Plan outlay. Thus, a little less than one-third of developmental expenditure is also in reality consumption expenditure. It is treated as developmental because it is classed as such. Under the conditions, an increase in annual Plan outlay would not necessarily imply more development and higher growth rate of economy. If the Finance Minister has allowed Plan outlay to go up by 14.5 per cent over the last year's figure and no more and thus, if, in view of more than 20 per cent current rate of inflation, in real terms, there has been no increase in Plan outlay, as some critics point out, one need not feel unduly concerned over it. In fact, the Finance Minister is to be complimented for resisting the temptation of putting up the Plan outlay and thereby increase budgetary deficit still further.

That, at best, however, is a negative gain. On the positive side of mopping up the existing excess demand or preventing further effective demand being generated as a result of government's profligate spending, the Finance Minister has hardly anything to show to his credit. The claim that his Budget would encourage savings because of the incentives offered for deposits in provident fund account and payment of insurance premia, etc., may be justified to some extent but it does not carry matters far, so far control of

Economic Revival

Let us now turn to revival of the economy and setting it on the growth path again. Here, through certain relief measures granted in direct taxes, the Finance Minister has striven to encourage savings and investments in the private sector, the main thrust of the annual plan for 1980-81 being "to revive and restore the health of the economy and accelerate the pace of economic growth as well as employment generation". In the private sector, a climate for new investment is sought to be created by the proposal to continue the tax holiday in respect of new industrial undertakings, ships and hotels, in a modified form. Twenty-five per cent of the profits of the companies derived from these sources will be exempt from taxation for a period of seven years. Further, an additional depreciation allowance equal to 50 per cent of the normal depreciation on new machinery or plant installed during the new Plan period, i.e., upto 1985, will be granted. Against these concessions, the proposed modification in Section 80-J of the Income Tax Act has taken away an important concession enjoyed in the past by these companies. Not only that. The modification given retrospective effect, may result in refund by the payer of the amounts claimed by him in the past few years under this head. Such changes do not conduce to building up confidence of the industrialist so necessary to revive investment activity under the present conditions. However, even if an upward trend in private investment activity is brought about by the proposed tax concessions, this increase in the investment activity in the private sector cannot compensate for the slow-down of the tempo of investment in public sector reflected in the modest size of the annual plan forced on us by the dearth of resources that the exchequer is facing. The contribution of the Budget to the revival of economy and improvement of growth rate cannot, therefore, be rated very high.

Employment and Help to Poor

A provision of Rs. 340 crores has been made for launching a National Rural Employment Programme intended to create 850 to 900 million man-days jobs in the rural area for the unemployed. This means conversion of Food-for-Work Programme which has been in operation since 1977 into a permanent programme of rural employment somewhat on the model of the Maharashtra State's Rural Employment Guarantee programme started first as a relief measure in the drought of 1973-74 and later put on a permanent footing to provide employment to the landless labourers and the village poor in the agricultural off-season when there is little farm work for rural labour. Last year, expenditure on Food-for-Work Programme was Rs. 350 crores. Thus the scale of operation of the employment programme under the new scheme would be the same as under the Food-for-Work Programme last year with this difference that last year, it was largely a relief measure while now it is intended to be a social welfare programme on the one hand and that of rural work and development on the other. Referring to the Food-for-Work Programme in his Budget speech, the Finance Minister said : ".......... in the last two years, this programme has displayed certain weaknesses. In many cases, no attempts have been made to develop an inventory of projects which will meet not only the local needs but also fit in with the overall national priorities. There was also no firm indication of annual allocation of foodgrains. The programme thus in effect continued on ad hoc basis. No arrangements were also made for financing the cash component of the work programme undertaken by the State Governments with the help of foodgrains allocated to them. The result was that that they could not undertake works which could lead to creation of durable assets and the building up of productive potential of the areas concerned". In the new programmes, these defects are promised to be removed but how far that actually happens remains yet to be seen. The same is true of Harijan Welfare Scheme for which a Budget provision of Rs. 100 crores has been made and the Tribal People Welfare Scheme which has been allocated Rs. 70 crores Unless detailed preparatory work is done on the works to be constructed and projects to be undertaken under these schemes, much of this expenditure may turn into doles for current consumption and not create income generating assets and skills to increase incomes of the Scheduled Caste and tribal people on a permanent basis. That, however, is an administrative problem and not one with which the Finance Minister is directly concerned.

To conclude, the Budget does not make any direct contribution to the control of inflation or resurgence of growth of the economy. Its virtue lies in the negative fact that it does not make matters worse in these two respects by resort to new imposts to fill up the deficit-gap that has now been left uncovered. Unlike last year's Budget of Shri Charan Singh, the present Budget spares the people from additional commodity taxation inspite of the fact that a large deficit has been left uncovered. It is this fact that has attracted for the Budget widespread approval and almost universal applause. If the monsoons this year are normal and agricultural production looks up, the evil results of such a huge uncovered deficit may remain dormant and be not easily discernible for some time. But these cannot be wished away. The remedy for the present situation lies in improvement of the working of infrastructure of coal, transport, power and steel, and in severely curbing the black money operations. Obviously, the Budget could not have done anything to achieve these two objectives and the Finance Minister, Shri Venkatraman can hardly be blamed for not attempting to do that. But we do need a policy and sense of direction for controlling inflation and resuscitating growth of the economy. The sooner we have that, the better for the future of the economy and the people. □

Budget at a Glance

RECEIPTS

Excise	Rs.	3,550	crores
Customs	Rs.	2,989	crores
Corporation tax	Rs.	1,515	crores
Income-tax	Rs.	494	crores
Other taxes	Rs.	402	crores
Loan recoveries	Rs.	1,832	crores
Non-tax revenue	Rs.	3,406	crores
Market loans, small savings and provident funds	Rs.	3,900	crores
External loans, including loan from IMF Trust Fund	Rs.	1,340	crores
Other receipts	Rs.	622	crores
The uncovered budget deficit totals	Rs.	622	crores

Tax revenue is exclusive of the States' share of taxes and duties amounting to Rs. 3,658 crores.

EXPENDITURE

Sixty per cent of the total expenditure of the Union Government during 1980-81 would be in respect of developmental programmes. The major heads of expenditure are :

PLAN

Central Plan	Rs.	5,322	crores
State and Union Territories Plans	Rs.	3,094	crores
	Rs.	8,415	crores
Other development expenditure	Rs.	4,544	crores
Defence	Rs.	3,600	crores
Interest payments	Rs.	2,598	crores
Statutory and other transfers to States and Union Territories	Rs.	785	crores
Other expenditure	Rs.	1,524	crores

Transfers to States are exclusive of shares of taxes and duties amounting to Rs. 3,658 crores.

The Rupee How it

comes from

Of every rupee to be collected during the year, 17 paise will come from excise, 14 paise from customs, seven paise from corporation tax and two paise each from income-tax and other taxes.

Loan recoveries will fetch eight paise, non-tax revenue 16 paise, market loans, small savings and provident funds 18 paise, external loans including loans from IMF six paise, and other receipts three paise. Seven paise has been left as deficit.

and goes to

From every rupee thus collected, 39 paise will be spent on plan implementation and 21 paise on other development expenditure. Defence will account for 17 paise, interest payments 12 paise and statutory and other transfers to State and Union Territory governments four paise. Seven paise will be on other expenditure.

World Conference of the United Nations Decade for Women

The Invisible Women

In the rural areas of the developing world, women are responsible for at least 50 percent of food production in addition to the tasks of cooking, cleaning, washing and looking after the family.

WOMEN and girls are half the world's population, do two-thirds of the world's work hours receive a tenth of the world's income, and own less than a hundredth of the world's property.

It was to attack this world-wide 'apartheid by sex' that the U.N. launched the Decade for Women back in 1975. This July, exactly halfway through the Decade, delegates from almost every nation in the world will meet in Copenhagen, to review what has been achieved.

Right now in New York the conference organisers, working under former Jamaican Ambassador to the U.N Lucille Mair, are busy analysing questionnaires, filled in by 86 governments in an attempt to find out exactly what progress women are making towards equality.

Some of the results to date :—

Education

Two out of three of the world's illiterates are women. Faced with high costs of schooling and limited job opportunities for the educated, many parents tend to invest only in boys The importance of girls' work in the home and the high incidence of teenage pregnancy are also cited as barriers to female enrolment. But some countries are trying harder than others—Nepal is now giving cash rewards to schools which have the most girls in their classrooms and Kenya is offering more scholarships and lower fees to women students.

Politics

Women are inching forward in politics—a move seen by the U.N. as essential for every other kind of progress. In the last five years, women's movements have emerged in almost every nation. One result is that most countries are reporting a steady rise in the percentage of women exercising their right to vote. There is also a slight but world-wide increase in the number of women being elected to public office. Egypt has reserved 30 seats in Parliament for women; Guinea Bissau has at least 2 women on every 5 person Revolutionary Council; and the U.S.S.R., long a leader female emancipation, has near equality of the sexes in its local Soviets and a 35 per cent female stake in the Supreme Soviet.

There is also some evidence that women's involvement in decision making might change priorities—in a survey covering three villages in India both men and women were asked to choose what the village most needed : the men voted for a new road and the women for a primary health care centre.

Divorce

The idea that families are invariably headed by a man turns out to be one of the myths of the modern world—fully a third of all families are now headed by a woman. One cause is divorce—which has more than doubled in both the U.S A. and the U.S.S.R. in the last 15 years. And in the developing countries, nearly half of the single women over 15 years of age are now mothers.

Work

New figures from the International Labour Organisation nail another myth—that men are the farmers and the food growers In the developing world today women are responsible for 50 per cent of total food production. A recent survey in Tanzania, for example, shows that women work an average of 2600 hours a year in agriculture as opposed to only 1800 a year for men. In Africa as a whole, 60 per cent of all agricultural work, 50 per cent of animal husbandry, and 100 per cent of food processing is done by women.

Health

Women are continuing to get a raw deal from the health services. Three quarters of the health problems

of the developing world could be prevented by better nutrition, water, sanitation, education and immunisation, all of which are usually the responsibility of women. But 80 per cent of medical and health budgets are devoted to doctors and hospitals promoting curative medicine to a small proportion of the population. In the rural areas only about 15 per cent of the population have access to modern health care and, during pregnancy and child birth, more than half of the world's women have no trained help. Only a third have access to family planning.

Double Burden

Overall, a woman's 'double burden' of bearing and caring for children as well as working outside the home remains the heaviest mill-stone around the neck of female emanacipation. For millions of women in the Third World—who cook and clean, sew and wash, plant and weed, care for the old and bring up the young—a 16 hour day is not uncommon. For these women, there is neither the time nor the energy nor the opportunity to invest in training, careers, or self-development.

Pay

In the industrialised world, pay differentials have narrowed considerably since 1975 but, on average, a women is still paid only one-half to three-quarters of the money that a man can earn for doing the same job.

Most damning of all the findings in the survey is the fact that economic development itself can be bad news for women. Improving educational opportunities can mean a worsening of inequalities if it means that the opportunities only go to boys. Improved agricultural techniques like tractors can shorten the working week of men who do the ploughing and lengthen the working hours of the women who do the weeding.

Thoughout the developing world, says the Conference Secretariat, a major problem is that women's work is often invisible—a man laying a water pipe in a city is part of the statistics of development. A women carrying a day's supply of water from a well to a village is not. Her work, though vital to the task of meeting the daily needs of the family, goes unrecorded and unrewarded. ☐

(U. N. feature)

Hints For Housewives

EIGHT ways to make your Gas or Kerosene last longer every month.

1. A few minutes of planning and organising make a big fuel saving !

Cooking is so much more enjoyable—and less fuel consuming !—if you've got all things chopped and ready, spices within easy reach, before lighting your stove. Never keep a flame burning unnecessarily.

2. The biggest fuel saver—the pressure cooker !

Pressure cooking takes less time and consumes 30 per cent less fuel, compared to ordinary cooking. But do you know ? You can reduce the flame and completely switch off the stove since, after a while, food continues to cook inside with the pressure of the steam. You save 5 to 8 minutes of cooking fuel each time, this way.

Plan your cooking so that you cook rice, dal, boil vegetables all at the same time—think of the fuel saved !

3. Put the lid on-heat waste.

Speed up cooking vegetables or meat by placing a lid on the vessel. You'll find food cooks with less fuel this way, as heat is retained within the vessel.

Another point every thrifty housewife should know : once a vessel's contents reach boiling point, a low flame is enough to keep it boiling. Always reduce the flame once boiling starts—you save 25 per cent fuel with this simple action.

4. Water quantity should be right.

Keep in mind that surplus water consumes unnecessary fuel while cooking rice or vegetables. Besides, even your mother would've told you that food tastes better when cooked in the minimum amount of water—and it's more nutritious too.

5. The size and shape of the vessel make a difference too.

A vessel 25 cm in diameter is the most ideal for cooking, as there is no waste of fuel. Never use a taller vessel than necessary—shallow, wide vessels consumes less fuel.

6. Eating together saves money !

Avoid re-heating food as much as possible by planing meal times when all the family members can eat together. Besides, every time you re-heat food, its nutritive contents are lost.

7. Save fuel with the smaller burner !

When you are in a hurry, and use the big burner of your gas stove, remember that you may be consuming up to 15 per cent excess fuel. Ask yourself if it is worth the time saved. The more you use the smaller burner, the longer the gas lasts.

8. A clean burner helps too.

Is the burner clogged, or do the wicks need changing ? A constant check is a must to get the best out of your stove.

These tips are so simple that they'll soon be a part of your everyday habits. It may be only a few seconds worth of fuel saved each time—but it'll make your gas cylinder or kerosene last so much longer each month !

Is Foreign Aid Unavoidable ?

Dr. Kiran Barman*

THE aim of foreign aid to underdeveloped countries is to accelerate economic development up to a point where a satisfactory rate of growth can be achieved on a self-sustaining basis. The general aim of aid (loans, grants and technical assistance) is to provide in each underdeveloped country a positive incentive for maximum national effort to increase its rate of growth. The increase in income, savings and investment which the aid directly and indirectly makes possible will shorten the time it takes to achieve self-sustaining growth

The word aid, popularised by the donors is misleading. After all the bulk nearly 90 per cent of what is called aid is no more than mere loans which have to be repaid, along with interest on little less than commercial terms. It is only lately that the conditions have been softened and the more socially conscious among the developed nations, like Canada and U.K., have provided outright grants. Even so, it would seem that loans, particularly when they are tied, help the donors more because the prices of machinery and equipment and other commodities which are purchased from the aid funds are usually higher than international prices, sometimes by over 25 per cent. Besides aid creates a demand for raw materials or components by the borrowing countries. Aid certainly is not charity.

However, in the process of economic development the developing countries cannot exist and can never develop to the extent to complete unless they acquire in the shortest span of time the technological skill and complex that exists today in the advanced countries.

Foreign aid to us, became a necessity since 1956-57 when the Second Five Year Plan was implemented with great emphasis on heavy industries. This investment naturally contained a large amount of foreign aid which could not be financed from normal trade surpluses In fact, exports were static and imports were increasing at a higher rate because the food situation was unfavourable as compared with increase in population and on the other hand the country was investing in projects for which machinery and equipment had to be obtained from abroad. Besides, import substitution cannot be maintained without aid unless the difficult course of devaluation, is adopted. Foreign aid became an inevitable source of financing these excess imports. However, recourse to aid was not without justifiable hesitation. Even at that time aid was not conceived as a permanent feature. Since the advent of planning in our country the strategy was to make the economy self-reliant. Projects financed from aid could help in reducing imports by enlarging the production lease or even promoting exports. As these projects matured the need for foreign aid would automatically reduce and ultimately disappear. However, even after 28 years of planning in our country the aid inflow has not mitigated, it is even increasing.

The total aid authorised by the end of 1978 was nearly Rs. 21,000 crores including Rs. 1,800 crores of grants. Not all the loans were immediately used up. Each Plan period ended with a backlog of unutilised aid measuring broadly the delay in the implementation of plan schemes. Of the loans so far taken, the Government of India has already repaid about a quarter, leaving a balance of Rs. 10,000 crore to be paid in future. The interest payment on these loans exceeded Rs. 2,700 crores.

The outstanding foreign loans are now about a third of the total public debt of the Union Government 12 per cent of the GNP and 170 per cent of our exports. Nearly one-fifth of the export earnings finance external debt servicing, i.e., loan repayments and interest. The aid contribution can be appreciated in a better way when viewed in relation to export import gap. Table 1 shows how much of the gap was financed by external assistance. During the First three plan periods, imports exceeded exports by Rs. 571 crores, Rs. 1,806 crores and Rs. 2,443 crores respectively. This was covered by 194 crores (34 per cent of the total) Rs. 1,430 crores (79.2 per cent of the total) and Rs. 2,869 crores (117.4 per cent of the total) respectively. The aid not only covered the gap entirely but also helped to finance the deficit in the balance of payments on other accounts to the extent of 77.8 per cent.

The gap during the annual plans stood at Rs. 2,168 crores. Foreign aid again exceeded this gap and left a balance after covering the entire deficits in the balance of payment. This trend, however, continued the trade gap as it started increasing in the form of deficit, the amount of aid remained higher than that of the gap This resulted in increase in our foreign exchange reserves. Thus, in the absence of foreign aid India could not have been in a position to impart the amount required by the economy.

This however, should not be taken to mean that foreign aid has got to be taken irrespective of its costs. Foreign aid is a part of mutual help and in any programme of mutual help it is not always necessary that both the parties may be benefited simultaneously. Generally, it happens that at the time one party is in distress the other party extends its support in the expectation that the other party will reciprocate when the former needs and the latter is in a position to do so. While it is difficult to conceive that the poor countries of today will reciprocate their donors in the same manner, it is undoubtedly true that with a prosperous world also in the underdeveloped areas, the whole of the humanity, including those in the industrially advanced areas of today, will benefit from an ever expanding world trade, besides other socio-political and cultural benefits.

*Lecturer in Economics, Banaras Hindu University

Table 1

Aid and Export Import Gap 1951—1978

(Rs. in crores)

Period	Import	Export	Gap	Total Aid	Total Aid as % of gap
First Plan	3,615	3,044	—571	194	34.0
Second Plan	4,924	3,118	—1,806	1,430	79.2
Third Plan	6,204	3,761	—2,443	2,869	117 4
Annual Plans	5,814	3,646	—2,168	2,655	122.4
1969-70	1,582	1,413	—169	856	506 0
1971-72	1,824	1,608	—106	834	719 0
1972-73	1,867	1,970	—103	666	646 6
1973-74	2,955	2,523	—432	999	231.0
1974-75	4,468	3,304	— 1,164	1,337	114.0
1975-76	5,157	3,941	—1,216	1,839	151 2
1976-77	3,591	3,546	—45	1,282	2,840 0
1977-78	6,069	5,375	—694	1,043	150 2

An important change is needed for foreign aid psychology. The total outstanding debt amounted to Rs 10,000 crores. Indeed, it would have been more if the U.S. had not written off a substantial part of the P. L. 480 assistance or if debt relief had not been offered by other countries like the U.K. and West Germany. Instead of accepting more aid with higher concessions it is desirable to persuade the tenaer countries to write off a part of the loans that have been accumulated and which in fact have partly helped them also. A relief in debt servicing which now amount Rs. 1,000 crores a year and constitutes nearly one fifth of the export earnings would be more constructive than additional foreign assistance □

Fuel Saving In Soviet Union

Alevander Guber*

THE uncontrolled growth of the production and use of fossil fuels is impossible, ecologically harmful and economically unwarranted. Today, the world knows that the squandering of fuel and energy is dangerous.

Fuel saving is expensive. According to experts, reducing the cost of a ton of conventional fuel requires the average of 60 roubles in investments. However, we would have to pay two and a half times as much to increase the output by a ton (plus transportation costs) This shows that the economy of fuel is both necessary and money-saving

New Fuel Saving Methods

The new ammonia production method, using steam to drive turbo-compressors, reduces electricity input per ton of output to one sixth of its former self and even less and does not require outside thermal power. Compared with the two-stage method, the one-stage butane dehydration process of making divinyl, used to produce synthetic rubber, halves specific electricity inputs.

The dry cement-making method yields a quality product and halves the spending of fuel and energy, compared with the wet process.

In the engineering and metal-working industry updated technological processes can cut fuel and energy inputs by 20—30 per cent. Similar examples can be taken from any other industry This means both the saving of fuel and energy, and the growth of technological standards and the quality of output.

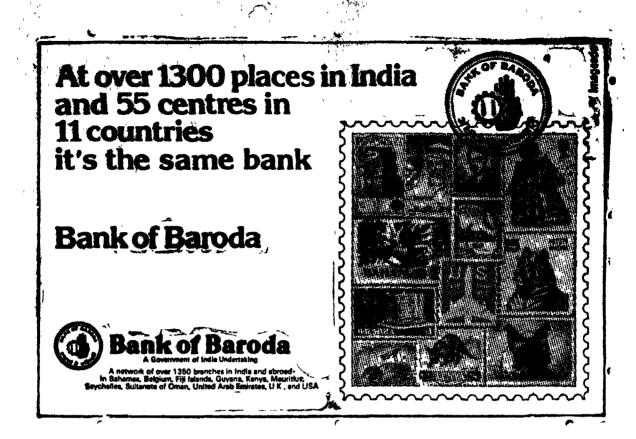
*APN Economic Commentator

The use of the heat of industrial discharge water, will make it possible to reduce fuel spending on heat production at least by 30 per cent, compared with standard boilers For this, it is necessary to have freon compressor thermal pumps which will save fuel and produce ecologically pure energy. Petroleum engines consume 120 grams of fuel per ton kilometre and diesel engines, only 68 grams. Increase the share of diesel automobiles in freight and passenger traffic by one per cent saves a million tons of conventional fuel.

The thrifty use of materials is another way to cut down fuel expenditures. Thus, the economy of a million tons of rolled metal is equivalent to saving a million tons of conventional fuel used for energy production.

The fuel extraction sectors also have big reserves to promote the efficient use of fuel and energy. Let us begin with the question of increasing oil bed recovery coefficient. Today 85 out of every 100 Soviet tons of oil are produced by means of different bed stimulation techniques The USSR is ahead of other oil-producing countries in the use of these methods. However, on the main Soviet oil fields the final recovery coefficient does not exceed 0.5, which means that 50 per cent, and sometimes more, of oil remains underground. Specialists say that the recovery coefficient can be considerably raised and this is proved by the use of new physical, chemical and thermal techniques.

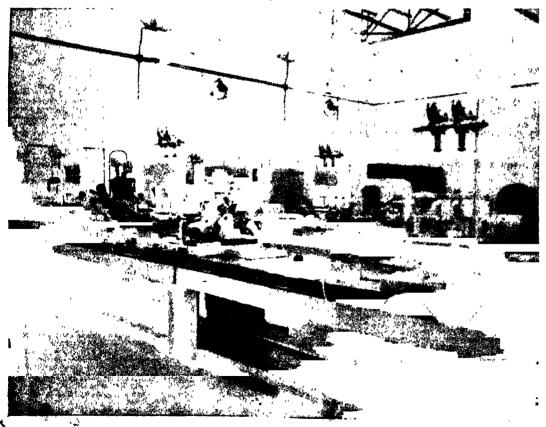
Casing-head gas is another important question. Although the country has done much in this field over the recent years, the losses of this valuable product are still big.

We can also save much by reducing the losses of coal, particularly of deep-mined coal (open-cast techniques reduce losses to a third). We lose not only coal, but also methane in the mines.□

KERALA with the highest percentage of literacy in India, continues to face the problem of acute unemployment particularly amongst the educated. According to the economic survey of 1978, there were 21946 certificate holders from Industrial Training Institutions, 4951 diploma holders, 1389 engineering graduates, 48765 pre-degree holders, 59823 graduates and post-graduates, 3.66 lakh SSLC holders and 4.01 lakh non-SSLC persons registered in the Employment Exchanges. The total registration of all categories including professionals in the employment exchange is 7.3 lakh persons. In addition to the above, a large number of the rural population running into several lakhs who work only on casual basis during the seasons are not registered in any employment exchange.

It is generally recognised that Kerala is most suited for the electronic industry than perhaps any other part of the country due to the abundance of an educated labour force who could be trained as skilled workers and technicians The electronics industry unlike other industries such as Chemicals and Fertilizers, does not in any way pollute the environment The capital investment involved is also appreciably small compared to any other industry especially in the manufacture of electronic equipment and systems

August 1973 witnessed the launching of an electronic revolution in Kerala with the inauguration of the Kerala State Electronics Development Corporation, a Kerala Government undertaking now known as Keltron throughout the country and abroad

*Chairman, Kerala State Electronics Development Corporation Ltd

Electro[illegible]

Power devices under fabrication

Since then and [illegible] Corporation has [illegible] tronics map of I[illegible] poration has been [illegible] electronic growth, [illegible] economic developn[illegible]

As a first step, [illegible] 30th of August 1[illegible] tion of India Lin[illegible] sets, and product[illegible] ed almost six mo[illegible] By now the Corp[illegible] ECTV sets to the [illegible] first agreement w[illegible] India Limited was [illegible] sets under its own [illegible] TRON TV sets is [illegible] sands of sets have [illegible] ing in May 1979. Keltrons started n[illegible] market after su[illegible] Bombay.

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Keltron TV sets are manufactured at the Keltron Equipment Complex, situated at Karakulam, in Trivandrum District. Till last year the production achievement was only 5000 sets per annum. But from the present month, production has risen to the order of 1100 sets per month.

Keltron has pioneered information display systems through the medium of television with their now well-established Closed Circuit Television Systems. A major installation of this kind has been successfully operating in Bombay's international airport. Several systems have been installed in railway terminals as well as in medical and scientific institutions. The installation of CCTV in the Madras airport currently in progress, is expected to be completed and the system ready for commissioning within a few weeks.

The Corporation's Electronics Research and Development Centre is actively engaged in the design and development of highly sophisticated data terminals and alpha-numerical display systems as part of its programme to advance into sophisticated television technology.

Wide Range of Components

KELTRON has entered the electronics field in a big way setting up 13 manufacturing units dispersed all over the State in urban and rural areas. These units now manufacture a wide range of electronic components, equipment and systems which include micro-processor based systems, impulse clock systems, power

Electro-mechanical counters being manufactured

transistors, ceramic and aluminium electrolytic capacitors, piezo-electric crystals, carbon film resistors, ferrites, thermisters, electro-mechanical counters, speedometers, cine projectors, electronic cash registers, a range of calculators and transistor radios, thyristor controlled AC/DC drives, inverters and power plants. KELTRON is privileged to have fabricated and supplied the biggest ever installed uninterruptible power supply system in the country for the BARC at Kalpakkam. In addition, several prestigious orders for the Indian Space Research Organisation, Indian Telephone Industries and Defence have been successfully completed.

Recently, Keltron has entered the strategic area of process control instrumentation. A manufacturing unit in technical collaboration with M/s. Controle Bailey of France and requiring an investment of Rs. 7 crores is being set up at Aroor in industrially backward district of Kerala. Keltron has already received orders worth Rs. 15 crores for the supply of control instrumentation equipment for the Wanakbori, Satpura and Tuticorin thermal power stations situated in Gujarat, Madhya Pradesh and Tamil Nadu respectively

Import Substitution

Keltron has developed several products for import substitution and has many firsts to its credit. Besides, Keltron products have found acceptance in different parts of the world such as the USSR, Rumania, West Germany, the UK and Libya.

Steadily increasing from Rs. 70 lakhs as its turnover during 1974, it has reached Rs. 5.5 crores by the last financial year and expects to touch the level of Rs. 14 crores during the current year.

Apart from its dedicated efforts in developing the electronic industry through its own units, Keltron has already given priority to the task of building up a wide net-work of small industrial organisations aiming at the total industrial growth of the State, paving the way for more employment opportunities. More than 100 small scale units are now being supported by Keltron. Recently, an understanding has been arrived at with the Central Government's Social Welfare Board in New Delhi for a large scale organisation of women's Industrial Societies for the production of electronic goods in Kerala and Kashmir. The Corporation is also supporting a consortium of small scale entrepreneurs who have been licensed by the Government of India for the producton of calculators and business machines.

Thus Keltron is spearheading an electronics revolution in Kerala continually extending its boundaries and dimensions to further employment generation, rural industrialisation and scientific and technological self-reliance as Kerala's contribution to India's electronics development □

Optimum Energy Consumption in Transport

TRANSPORT Planning should aim at optimum energy conservation and measures geared to this objective should be encouraged and strengthened This has been recommended by the National Transport Policy Committee in its report submitted to the Government of India.

The Committee has recommended that the increased use of electricity for motive power be made which was particularly suitable for railways on major trunk routes, metropolitan areas, ropeways, pipelines, trolley buses and trams. Utilising primarily coal and hydel resources, both indigenous, electricity should be preferred to petroleum-based energy sources. For conservation of petroleum products, the Committee has recommended a larger role for railways and encouragement of such modes of transport as inland waterways and coastal shipping, even though they may need financial assistance from the Government.

The Committee has recommended that transport pricing should be cost based and to the extent possible indirect or hidden subsides should be avoided. Subsidies needed for special reason for a particular mode of geographical area, such as north eastern region, should be direct and explicit.

The Committee has stressed the need for development of roads in rural areas as part of the integrated rural development programme. It has referred to improved design for bullock carts and other animal-drawn vehicles which would continue to be an important means of transport for years to come in rural areas. □

Railway Bugdet At A Glance

(Rupees in crores)

Revised Budget Estimates—1980-81

	1979-80	As presented in in March '80	As now proposed
Gross Traffic Receipts . .	2354 44	2545.35	2749.59
Ordinary Working Expenses .	1864.07	1990.47	2111.93
Appropriation to Depreciation .	200.00	220.00	220.00
Reserve Fund Appropriation to Pension Fund .	64.00	84 00	84.00
Miscellaneous Expenditure . .	—27 50	—30.67	—31.29
Total Working Expenses . .	2100.57	2263.80	2384.64
Net Revenue .	253.87	281.55	364.95
Dividend . .	295.97	319.67	322.24
Net Surplus (Plus)/ Deficit(—) .	—42.10	—38.12	+32.71
Operating Ratio .	94.4%	90.1%	87.8%

Differential Rate of Interest Scheme

Natabar Khuntia

DURING the last decade many special schemes were introduced by the Government to improve the economic conditions of the weaker sections of the society. The Differential Rate of Interest (DRI) Scheme is one such scheme which was introduced in 1972. The scheme envisages financing of the weakest section for gainful self-employment at a nominal rate of interest of 4 per cent by the public sector banks

The criteria initially laid down for the identification of borrowers were :

Who have no tangible security of any worth to offer as their own.

Who cannot produce a security or guarantee of a well-to-do party.

Who are prepared to work hard.

Who can be helped to rise above the present economic levels in a productive endeavour with assistance from banks, the productive endeavour being such as would become economically viable within a period of about three years.

Who do not incur liability to two sources of finance at the same time.

The borrowers, were to be selected from the following sectors :

The Scheduled Tribes and Castes and others engaged on a very modest scale in agriculture. Those people who themselves collect, or do elementary processing of forest products, and those who themselves collect fodder in difficult areas and sell it to farmers or traders. People physically engaged on a modest scale in the field of cottage and rural industries and vacations in urban areas like cutting cloth and sewing garments making reasonably cheap eatables, home delivery service of articles and commodities of daily use, running wayside tea stalls, plying of self-owned manual and cycle rickshaws, repairing of shoes mainly by hand, basket making by hand, and so on.

Indigent students going in for higher education who do not get scholarships or maintenance grants from Government or educational authorities. Physically handicapped persons pursuing a gainful occupation where some durable equipment and/or continuous supply of raw material is useful. Orphanages and women's home where saleable goods are made and for which no adequate and dependable sources of finance, e.g., endowments or regular charities, exist.

The maximum loan amount should not exceed Rs. 500 for working capital and Rs. 2,500 for term loan. The maximum was subsequently raised to Rs. 1,500 and Rs. 5,000 respectively. Other terms were also liberalised from time to time. Advance under the scheme would be covered under credit guarantee scheme of the Credit Guarantee Corporation of India Ltd.

Progress of the Scheme

Eight years have passed since introduction of the scheme. The scheme has been liberalised thrice, to achieve its objective of uplifting the poor.

The progress made by the public sector banks under the scheme appears to be encouraging though not spectacular. The number of borrowal accounts went up from 26,202 as at the end of 1972 to 17.57 lakh at the end March, 1979. During the same period the amount outstanding increased from Rs. 87.3 lakhs to Rs. 103.17 crore. The average amount of loan per account increased from Rs. 335 at the end of December 1972 to Rs. 587 at the end of March, 1979. The scheme will make further rapid progress in future due to recent liberalisation. All those banks which have not been able to achieve the stipulated lending under the scheme have been told to gear up their performance in this direction. The banks are now trying to achieve the prescribed limit of 1 per cent under the scheme of their total advances.

Drawbacks in Implementation

Unfortunately, the extremely low rate of recovery of 29 per cent as on March 1979 is acting as a stumbling block in the progress of the scheme. Overdues as high as 71 per cent indicate that there is practically no recycling of the funds. As a result, the benefits could not be extended to increasing the number of beneficiaries. If there would have been good recovery performance, the number of beneficiaries should have been tripled by this time. The high percentage of overdues is due to mainly lack of proper pre-lending appraisal, post-lending supervision and follow-up of loan accounts. The banks have not the required administrative development machinery for the purposes of proper identification of beneficiaries, assessment of their requirements and end use of credit to improve the quality of lending under the scheme.

The objective of the scheme is not just to achieve the statistical target of deployment of funds to the extent of 1 per cent of total advances, but to assist increasing number of poverty stricken people for their economic upliftment with this low interest bearing loan scheme. It appears that the banks are trying to achieve the

Agriculture Officer, United Bank of India, Bhuvaneswar

statistical target without ensuring proper end-use of credit. Of course, the cost aspect of the scheme does not encourage the banks to employ more personnel to ensure proper pre-lending inspections and post-lending supervision and follow-up of accounts. On an average, a bank has to pay 7 per cent interest on deposits, plus 2 per cent for servicing the deposits plus 4 per cent for servicing the DRI scheme. In all, this comes to 13 per cent. But the banks get only 4 per cent interest from DRI loans, leaving a deficit of 9 per cent. If this would be the reason which has refrained the banks in employing more personnel for proper implementation of the DRI scheme, then this is nothing but a wrong decision. This matter could have been taken by the banks jointly with Central Government to subsidise or to raise the interest in other sectors to make good the shortfall.

Again, there is regional imbalance in the implementation of the scheme. While the southern States obtained 31.5 per cent of total advances, the north-eastern region obtained only 1.5 per cent. Thus the banks are not making special efforts in the deploying of funds under the scheme in the development of backward regions. Moreover, only a few banks could achieve the earlier target of 0.5 per cent as at the end of March 1979 Since the target has been raised to 1 per cent, the banks are to make greater efforts to achieve the revised target.

Suggestions for improvement

If the upliftment of the weaker sections is the aim of the DRI scheme then the following suggestions may be taken into consideration for the proper implementation of the scheme to achieve the desired objective.

The bank personnel at the branch level, who are actually implementing the scheme, should be convinced that the objective of the scheme is not to achieve the statistical target of deploying 1 per cent of the total advances under the scheme, but to achieve the socio-economic objective of uplifting the poor.

The banks should strengthen their operational machinery so as to ensure proper pre-lending appraisal and post-lending follow-up and supervision with a view to proper end-use of credit. If the loan will be properly utilised then automatically repayment position will improve.

The States should strengthen their corporations meant for the welfare of the poor, so that the corporations can avail of the increasing amount of funds from the banks for re-lending to the poor for productive purposes. The corporations should take all the responsibility for identification of beneficiaries, supervision, follow-up and repayment of loans.

The Central Government should consider either to subsidise or to allow the banks to raise the interest in some other sectors to make good of shortfall to the extent of 50 per cent, so that banks can employ more personnel for proper implementation of the scheme.

The banks cannot take the responsibility alone for the proper implementation of the scheme. The States should assist the banks for identification of the beneficiaries, post-finance supervision, follow-up and repayment of the loans. There should be close co-ordination between the Government developmental agencies and operating banks for implementation of the scheme at the field level. The required inputs, raw materials and technical assistance should also be made available to the beneficiaries under the scheme by Government agencies.

Some States are implementing the Antyodaya Programme. There is no fundamental difference between the Antyodaya Programme and DRI scheme. There should be an integration of the two schemes. The State agencies should identify the beneficiaries under the Antyodaya Programme, prepare bankable schemes for the beneficiaries and take assistance of the banks for financing the beneficiaries under the DRI scheme. Its success depends on proper end-use of credit, which should be ensured by the Government agencies.

There should be continuous and vigilant watch by way of monitoring and evaluating the implementation of the scheme both by the controlling offices of the banks and the Reserve Bank. □

Agricultural Marketing In Bihar : Socio-Economic Constraints

Jagdish Prasad*

BIHAR, the second most populous State in India, holds about 10.3 per cent of country's total population whereas it accounts for about 5.6 per cent of country's total land area. It is essentially an agricultural economy where 76.8 per cent of total working population is engaged in the production of foodgrains and 92 per cent of the total farm land in Bihar is devoted to the cultivation of foodgrains alone. But being overwhelmingly a food economy, Bihar turns out to be a slightly deficit State having a shortfall of 8.5 lakh tonnes in 1977-78. The State requires 110 lakh tonnes of foodgrains annually at the present level of demand. The production in 1976-77 is estimated at 105 lakh tonnes, having a gap of five lakh tonnes

It is well-known that the orderly marketing of foodgrains is initially important in any campaign to free our population from hunger. Most of those who go hungry do so because they have to pay higher prices for their consumption foods due to higher marketing costs, etc. Moreover, the multiplicity of intermediaries has further aggravated the problems of foodgrains marketing with a low agricultural production thereby causing a low generation of marketed surplus under the present socio-economic set up.

During the first and second Five Year Plans, foodgrains marketing did not receive any importance and it could not contribute its due share in the socio-economic changes of the country. Whatever development that took place in the sphere of marketing was due to the gradual progress made towards the commercialisation of agriculture, as a result of its own dynamics, and not due to any specific government efforts. The lack of any governmental efforts allowed to exist the socio-economic constraints on the part of the poor middle peasants who produce 'under investment constraint' and sell under conditions of 'distress sale'. The proportion of poor middle peasants has increased from 54 per cent in 1951 to 62 per cent in 1961, and 72 per cent in 1971. The per capita income of the agricultural population has come down from Rs. 197.80 in 1950-51 to Rs. 195.50 in 1976-77. It reached a peak of Rs. 219.20 in 1960-61, then it declined In contrast, the per capita income of the remaining 28 per cent of population consisting of urban and non-agricultural population has shown an upward trend from Rs. 399.40 in 1950-51 to Rs. 813 in 1976-77. Thus, the rural rich have enjoyed the benefits of development and the poor middle peasants working under different constraints, i.e. investment, marketing etc. have remained deficit households and a victim of distress sales.

*Research Officer, A.N.S. Institute of Social Studies, Patna

Socio-economic Constraints

It is needless to emphasize that the presence in the agricultural sector itself of "semi-feudal constraints" on the one hand and the inadequate, outmoded, infrastructural facilities on the other, prevented the growth of an independent and vigorous market in foodgrains marketing A stunted market led to the development of an inefficient and exploitative market mechanism. And since much of the crop produced is for household consumption or for exchange by barter, and except for the commercial crops, the price incentive has little effect on the action of the cultivator, little effort was made to even deliberately improve the marketing system in so far as it affected colonial interests concerning cash crops.

As far the socio-economic constraints on the development of a market economy in Bihar's agriculture are concerned, the intermediaries (Zamindari) system was officially abolished after independence. However, this has, in fact meant only the abolition of intermediary i.e. revenue collection rights. The practice of land owners leasing out land on rent to actual cultivators still prevails This has resulted in the Indian agricultural economy in a lop-sided distribution of land as very few big land owners control huge areas of land and generally utilize it in an uneconomic manner, and the majority of the cultivators possess only small holdings which they are bound to utilize for subsistence cultivation.

Thus, by the iniquitous method of big cultivators, agriculture in Bihar is practically stagnant in a semi-feudal socio-economic set up. This has also resulted into a low generation of marketed surplus.

Marketable Surplus of Foodgrains

The surplus which is marketed comes largely from two sections : the farmers operating the small size holdings who have to make distress sale, and those owning the relatively large-sized holdings. A study conducted at Muzaffarpur and Dharbhanga in Bihar for estimating the marketable surplus in cases of individual cereals like rice, wheat and maize, so as to

know the nature and the size of the farms yielding marketable surplus as well as the size of the family and the socio-economic conditions of the farmers in the region has revealed the same facts. It is clear that the maximum number of families (29.7 per cent) of the total families in Muzaffarpur and 44.2 per cent in Darbhanga) having marketable surplus had farm of the size 5.1 to 15 acres. Further, it may also be marked that more than 60 per cent and 70 per cent of the total number of families cultivating upto 15 acres in Muzaffarpur and Darbhanga respectively had small marketable surplus. This may be due to the fact that the presence of semi-feudal characteristics in the Indian agricultural economy prevents the farmers from operating small-sized holdings, correspondingly in terms of mode of production to 'poormiddle peasants' to contribute to the market a real as distinct from that of distress sale.

This fact has also been further brought out by the study of the elasticity of sale with respect to production for various holding-size groups.

Marketing Conditions

The problem is further multiplied by the multiplicity of intermediaries which restrict the flow of marketable surplus generated by the big cultivators. Nevertheless, the big cultivators are paid unremunerative prices for their marketed surplus due to the presence of under-developed and inefficient agricultural marketing system where the farmers depend upon kuchha/pucca 'arhatiyas' for sale of their surplus. The arhatiyas operating as wholesale/commission agent in the urban markets facilitated the growth of exploitative mechanism of the agricultural markets having their strong bargaining power and several undesirable market charges. This creates a vicious circle of inefficient foodgrains marketing system.

Recently, in order to make the foodgrains marketing efficient, the Government of Bihar took steps to develop market places and a State Agricultural Marketing Board has been established by amending the Bihar Agricultural Produce Markets Act, 1960, and the Board has been given general supervisory powers over the market committees and has been made the key management agency for planning and development of the market places and for their proper operation. A Market Development Project has been drawn up (1973) for the development and modernization of the agricultural markets throughout Bihar with the help of the World Banks loan of $ 14 million. So far only 29 market yards have been constructed by the end of 1979 Yet, these attempts are only marginal efforts made by the Government to eradicate the constraints in foodgrains marketing. Most of the benefits would be appropriated by the rich and the affluent class of farmers and the intermediaries working in the market. The need is to orient the efforts and measures in favour of small medium farmers and to break the conditions of 'distress sale'. The present policy of the Government to build up market yards in urban and semi-urban areas cannot re-orient the measures in favour of the small farmers and cannot completely eliminate the constraints created by intermediaries.

Suggestions

As for the governmental interference the immediate call is to implement various land reforms measures to improve infra-structure facilities, to provide better transport facilities for the movement of grains and to make available grading facilities to the producer-sellers on urgent basis. A programme of financial help to the poor-middle peasants can also be included on the pledge of crops for marketing the produce so as to minimise their dependency on big cultivators. Along with it, regulated markets should be concentrated more in areas with large agricultural marketable surplus, and areas within bullock-cart distance from the cultivator's field. There is the immediate need to develop marketing yards in the rural areas, specially at block-level and in developed villages which have the road connection and where transport facilities may be provided. Once the vicious circle of big farmer-money lender-cum-trade is broken, further monetization of rural areas would be made easier as the poor-middle peasants would naturally behave like their counterparts elsewhere in India and would have the necessary incentives to produce more, increasing their marketable surplus as well as their marketed surplus and improving the supply position in the market. Regulation of supply and the emergence of regulated markets would go a long way in improving marketing conditions of agricultural products in Bihar.

Building Materials From Agro-Industrial Wastes

THE Central Building Research Institute, Roorkee has developed methods for producing good bricks from inferior type of soils like black cotton soils, red soils, sandy soils, and kallar soils, which were hitherto considered as unsuitable for making bricks. "Brick kilns using CBRI technique for making good quality bricks from black cotton soils are successfully running at Indore and Bhopal with the co-operation of M.P. Housing Board and Capital Project Authorities. Several private industries have also adopted this process.

The investigations carried out at the Institute have shown that these can be converted into the following useful building materials :

1. Fly-ash : for making cement clinker, concrete and mortar, sintered light weight aggregate for concrete and clay-bonded fly-ash bricks.
2. Slag : for making masonry cement.
3. Zinc mine tailing : for making sand-lime type autoclaved bricks, masonry cement, as filler material in making mortar and plastering concrete flooring tiles and as source of dolomite lime on firing.
4. Coir fibre/wood wool : for making corrugated roofing sheets and partition boards.
5. Rice husk and lime sludge : for making cementitious binder and building boards.
6. Ground nut, jute sticks, coconut pith and rice husk : for making portland cement bonded particle boards.
7. Saw dust : for making doors and window frames.

Is It Sellers' Inflation In India

S. K. Awasthi*

AFTER the Second World War, conditions of excess demand and the demand-pull inflationary price rise, prevailing in India, came to an end. This, however, could not decrease the total expenditure as the war-demand was replaced by pent up demand and increasing expenditure by the Central as well as the State Governments. By that time the level of expenditure was sustained, not by the buyer's demand for goods, but by the sellers' demand for money. So, the prices shot up. So Prof. A. P. Lerner described this state of economy as sellers' inflation.

The difference between cost inflation and that of sellers must be understood clearly. Under the conditions of cost inflation, sellers just pass on the increase in costs to the buyers by rising the prices. The profits of the sellers do not play any part in the price rise. The concept of cost inflation does not apply to the Indian situation for various reasons. First, only a small chunk of the employed population is paid wages and the rest are self-employed. Secondly, the business, including the production and distribution of essential commodities, is organised mostly on the individual proprietorship where there cannot be clear cut distinction between the wage costs and profits. Thirdly, in India, the prices started rising because the sellers demanded higher prices to inflate their profits. So the wage earners in turn, sought a rise in their wages. The rise in the wages is taken as increase in the costs justifying further rise in the prices as if the profits earned are just the minimum and there is no margin to absorb the enhancement in the wage rates. Thus everyone is trying to keep one's real income in tact by rising the prices of the products and services. Also some businessmen have tried to further escalate the prices by monopolising a number of commodities and services. Hence the formation of wholesalers' and traders' organisations, whose only function is to control the prices of as many commodities as possible.

*Lecturer in Economics, Allahabad University

Under these conditions no one is genuinely interested to increase the income by rising the output. All are trying to earn more by pushing up the prices of the available output to a level at which it may not be easy to sell and then use lack of demand as an excuse for not increasing the output.

The sellers' inflation, in the course of time, leads to the cost inflation, that is, rise in the prices to cover that in the cost of living or of production due to earlier increase in prices. For instance, in public undertakings, prices may be marked up to cover the increase in costs or the wage rates may be raised to cover the growth in the cost of living. Under the sellers' inflation, the prices go up to the highest point possible in the existing market conditions even in response to the increase in costs. The result is that the economy presents a mixture of cost inflation and sellers' inflation, the latter dominating the field of private business. The real distinction between the two, in layman language, lies in the attitude towards making up the prices. Anyhow, as sellers' inflation has been and is going to be, the cause of cost inflation, all the remedial measures must be directed to curb the same. In sellers' inflation, if the total sales in real terms remain constant, it signifies a rise in money expenditure proportionate to the increase in price level. Now, two questions arise: (1) Does not increase in money expenditure signify excess demand? (2) Is not increase in money supply the cause of increase in its expenditure and consequently of the price rise?

Excess Demand

Now with regard to the first question, the increase in expenditure need not mean excess demand. According to Prof. A. P. Lerner "Expenditure is the same thing as buyers' demand but an increase in expenditure is not the same thing as excess buyers' demand An increase is not the same thing as an excess. An excess of demand, by the buyers, induces the price increase. An increase in expenditure could be induced by it could be the result of the increase in prices brought about by the pressure of sellers" This is particularly so in India, where most of the population live at the margin of consumption level and find it difficult to reduce their purchase of essential consumption even though the sellers ask too high a price. On the other hand, even if the sellers were to quote a lower price, the purchase of these commodities would not have gone up, but marginally, due to the inelasticity of the demand. The money left over would have been used to increase the savings or consumption in other directions.

Price rise

The second question, namely, the increase in money supply is the cause of the price rise. The general line of argument followed in this respect is that the increase in money supply leads to a rise in its expenditure which creates excess demand and pushes up the price level. But we should understand that the rate of money expenditure can go up without a rise in its supply, if the velocity of circulation increases, say, because of rise in consumption expenditure at the cost of savings. That is wha

generally happens in a poor community when the prices rise. So prices can go up without any increase in money supply or excess demand. When an economy experiences rising prices and wages over a long period, everybody thinks that increase in prices and wages is a rule of the game. This is more particularly true in the case of an economy which is in the grip of sellers' inflation. Under these conditions, periodical rise in the prices and wages becomes a matter of course. Then prices are bound to go up even without a rise in the money supply. However, this situation cannot go on indefinitely. For sometime the price rise may be sustained by increase in the velocity of money ; but later the volume of sales in real terms is bound to decline in proportion to the price rise. This mixture of inflation, in the sense of rising prices, and depression or declining output and employment, will continue till the entire economy ultimately collapses into a real depression with rapidly falling prices and increasing unemployment. In short, under the conditions of sellers' inflation, prices may continue to rise without any increase in money supply If this situation is interpreted as the state of demand orthodox anti-inflationary methods are adopted, the process of collapse would be expedited with the depression going still deeper.

Indian economy

In the Indian economy, such a situation has been averted by the developmental plans of the Government. The investment programmes of the plans have achieved a slow rate of growth and the price rise. If the prices had not risen, the growth rate would, no doubt, have been greater. The investment programmes implemented by the Government have been partly responsible for the price rise. In fact, the Government plans investments on the basis of the existing prices much in advance of their execution. Meanwhile, prices go on increasing. By the time the Government takes up the execution of the projects, it is faced with continuously rising costs. As the planned programmes cannot be given up, the Government goes through them by resorting to deficit financing This provides the money needed to make purchases at higher prices and justifies the hopes of the sellers who proceed to rise the prices still further. Every plan contains references to the inflationary potential of the investment programme being drawn up with minimum necessary deficit. The Third Five Year Plan document said "By and large, what has to be guarded against is an upsurge of inflationary pressures although a situation of relative abundance in respect of some commodities with consequential price falls can emerge from time to time". The statement is particularly significant because it takes note of an upsurge of inflationary pressures and also warns the producers, in particular, about the possibility of a price fall resulting from an increased expansion in output.

The taxation programmes of the Government too play a part in rising the prices. Every increase in the indirect taxes, for instance, leads to a rise in the prices of the taxed commodities. In such a situation, when the Government starts to execute the Plan, it finds the funds originally provided in the plan are inadequate. Therefore, to meet the increased costs, the Government is forced to resort to additional deficit financing. The consequential increase in money supply provides the wherewithal to sustain the level of real income in the face of rising prices, and to provide occasionally for some rise in that level of income. The sellers turn out to be the real beneficiaries whose income increases more than the price rise. This increased income is partly used for spreading the speculative net wider and partly for rising the consumption level. Now those, whose income has not been able to keep pace with the rising price level, have to struggle hard to maintain their consumption even at the cost of savings. The luxury consumption of the privileged class of sellers goes up. This constitutes only a small part of the total production in the economy which consequently presents a picture of stagnation with rising prices. Increasing unemployment, unused capacity and rising prices are the charactertistics of sellers' or cost inflation. Under such circumstances, the Government resorts to deficit expenditure and is criticised. There cannot be any doubt that deficit expenditure, to a certain extent, leads to an increase in the general price level. But where is the alternative ? It is quite possible and probable that in the absence of deficit expenditure, when the sellers' inflation has been a persisting feature, owing to non-increase in money income, the price rise would have reduced the volume of sales. The consequent fall in the output would have been used as a justification for further rise in the prices under the pretext of increasing costs per unit.

The prices in each sector may be influenced by various factors. The prices in different sectors may be differently affected by factors like increase in the costs, decrease in supply due to natural factors, or due to the supply not increasing because of certain bottlenecks, in keeping with the increase in demand resulting from the real rate of growth of other sectors. Such rise in prices is bound to be reflected in the general price index according to the importance of the sector in the economy of the country. Apart from such specific factors affecting the prices in individual sectors, the price level may also show a general rising trend to sellers' inflation. This also cannot be said to be the result of excess demand.

Roy Harrod describes the price rise caused by any one or more of the above mentioned conditions as passive inflation opposed to active inflation resulting from "the actions of the naughty governments in issuing excessive quantity of notes, etc., or the state of affairs that resulted from that, namely, the consequent rise of prices as denominated in the national currency". Even the sellers' inflation is not of active type, because the price rise is not the outcome of the pressure of the buyers desiring to purchase more than normal quantities at the pre-inflation price. In fact, it is the outcome of the sellers' pressure to rise the price as high as possible even ignoring the risks of demand being adversely affected and even reduced. □

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STEP BY STEP

Union Bank Makes Progress

AN all round progress has been made by the Union Bank of India in its diamond jubilee year 1979. The deposits of the bank crossed the mark of Rs. 12 000 crore while the number of branches increased to 1117 and the reserves to Rs. 5.31 crore. The export finance also registered a growth of 34 per cent reaching a level of Rs. 81 crore.

The gross bank credit increased to Rs. 728.80 crore. Of the new farmers assisted in 1979, almost 75 per cent belonged to the small and marginal categories. Its 484 branches have adopted 1075 villages ☐

Protein Rich Drinks

FOOD and Technology Department of the Punjab Agricultural University has produced a unique protein-rich drink for the milk-starved people of the country. The bottled, Flavoured malted 'cross drink' is a mixture of 60 per cent milk and 40 per cent wheat extracts including solubles, proteins and carbohydrates. Experiments to mix extracts from other grains like maize, rice and barley etc are also being carried out.

The department has already developed a ready to serve grapefruit juice. A touch of bitterness makes it a useful fruit drink from the medical point of view. It has also the qualities to activize the liver and keep cholesterol low.

Bottling of sugarcane juice has also been developed It would ensure better hygiene than the present crushing system. ☐

Plastic Composite Panels

CENTRAL Building Research Institute has developed a process for producing plastic composite panels for use in partitions, claddings and flush doors In these panels expanded polytyrene (EPS) beads are used in the core and plywood or aluminium sheets as surfacing materials. The resin used for binding EPS beads has been formulated by CBRI from indigenously available materials. It is a low temperature, low pressure phenol formaldehyde type, requiring low expenditure in mould cost and curing operations.

The composite panels possess good sound and thermal insulation properties, built-in decoration and ease of installation and maintenance. ☐

Around India With Indrail Pass

INDIAN Railways earned over 9 lakh 14 thousand Dollars from the sale of 'Indrail Pass' tickets during the year 1979-80 as against about 8 lakh 63 thousand in the year 1978-79

The zonal railways sold as many as 15,221 'Indrail Pass' tickets to the foreigners and non-resident Indians during this period.

'The Indrail Pass' tickets scheme was introduced in June, 1977 to promote tourism in the country. From June 1977 to March 1980, the railways earned 22,90,208 Dollars against the sale of 46,875 'Indrail Pass' tickets. The ticket holder can travel in any train and go to any station in the country any number of times during a specific period. ☐

Record Output By BHEL

ALL-time high, record output of Rs. 133.45 crore has been achieved during 1979-80 by BHEL's Heavy Electrical Equipment Plant at Ranipur. This marks an increase of Rs. 7 crores over previous year's output. The BHEL's Central Foundry Forge Plant also at Ranipur, produced equipment worth Rs. 13.67 crores during the year.

The despatches of power plant and other equipment, from both the plants, also went up to Rs. 158.02 crores in 1979-80 as against Rs. 134.42 crores in the previous year making an increase of over 17 per cent.

During the year 1979-80, the HEEP manufactured six thermal sets, five hydro sets, 469 AC/DC machines and 619 control panels totalling to a capacity of 1703 MWs.

The 22 ancillary units of the BHEL, Hardwar also registered further progress in their operations. The BHEL, Hardwar alone placed orders worth Rs. 3 crores on these units. The total employment opportunity in these units has now risen to 1000.

Bharuch TopsIn Family Welfare

A Planned family is a happy family. It has been enthusiastically recognised by the villages of Bharuch district of Gujarat. Family Welfare Programme here showed the best performance during the year 1978-79 by enlisting the largest number of acceptors for terminal methods in the entire state. A record of 12,502 sterilisations which is 153.4 per cent of the target has been achieved here.

The programme was carried to all the 14 Primary Health Centres and nine of them surpassed the target of sterilisation. The Bharuch Panchayat has been honoured with the first prize of Rs. 1,25,000 by the State Government. ☐

UCO Bank Helps Rural Poor

HANDLOOM weavers of the Ren village of Nagaur district in Rajasthan are grateful to the United Commercial Bank for the finance provided to them at a concessional rate of interest. About fifty in number they now look forward for expanding their industry. All of them regularly turn up every month at the bank to repay the loan instalments.

The bank has advanced Rs. 14.02 crore at the close of 1979 while the share of agriculture sector alone was 5 29 crore. While Rs 2.70 crore have been given to the small industry and Rs. 1.73 crore to the transport industry. The bank has given Rs. 92,000 for education. At an interest rate of four per cent the bank has advanced Rs. 39.84 lakh to 4,297 persons including 1,914 belonging to Scheduled Caste and Scheduled Tribes.

The bank has formulated a three year credit plan envisaging an outlay of Rs. 103.34 crore for January 1980 to December 1982. The bank has 84 branches in the state out of which 43 are Operative in rural areas. ☐

BOOKS

Swami Vivekananda

Swami Vivekananda *by V. K. R. V. Rao (Builders of modern India, Publication Division, Government of India, Pages* 281, *Price Rs.* 17/-

FIFTY years ago, Vivekananda was an ideal whom the youth of the country adored and tried to follow. Fifty years and the advent of diverse idola fori hence, it seems doubtful that Vivekananda could still retain his relevance. The author gives away his own nagging doubts on this while giving a title to the Swami and a subtitle to his book—"The Prophet of Vedantic Socialism." The economist's sleight implicit in the attempt to revalue Vedanta with the appendage of Socialism, is an indication of the shift in the meaning of humanism that has occurred in the last fifty years. A similar attempt, but in the way of devaluation of the Vedas, made by Arun Shourie in his recent book, had brought a rejoinder from that prolific intellectual, Krishna Chaitanya. The concern of both was to assess the Vedas to see if it contained any humanistic credo that could have served as motivating factor for mass action. Shri Rao finds in Vivekananda's interpretation of Vedanta the kind of humanism that motivates socialist thought, and socialist action in the rare cases where socialism has managed to result in action. He cites Vivekananda's emphasis on feeding the hungry, tending the sick, teaching the ignorant, consoling the afflicted as the socialistic core of Vedanta. With a politician's blinkers, Shri Rao seems to appropriate for socialism all the progressive ideas about communal amity, repugnance to caste and superstition, welfare of women, advancement of science, and therefore finds in Vivekananda the prophecy of socialism which the political parties of today are to consummate, each in its way in the fulfilment of the historic destiny that each party has felt apportioned to it. Shri Rao relegates to a penultimate mention what Vivekananda must have felt to be the central message of his teaching: "Before flooding India with socialist or political ideas, first deluge the land with spiritual ideas. And after preaching spiritual knowledge, along with it will come that secular knowledge and every other knowledge that you want." The last decade and a half has been a painful reminder how absolutely right Vivekananda was. Inspite of consciences coming to the fore before splits and principles looming large before defections, we seem to be in short supply in respect of these spiritual ideas which Vivekananda wanted should flood India before socialist or political ideas were preached That goes for the humanism of Shri Shourie too

Humanism is an epiphenomenon of the search for individual freedom—the kind of freedom which all spiritualism is about To the extent that it is made the motivating factor for mass action, it is divorced from that with which it is placentally connected. Even Gandhiji's humanism arose out of his search for freedom which he called by its other name of Truth. Political and socialist ideas, when underived from spiritual ideas, may sanction the mass action that the idola fori are keen to manipulate. But neither the Vedas, nor the Vedanta, nor even Vivekananda can be of any relevance to such a situation. Shri Rao's book is readably written, but one wonders who the readers are going to be. Thirty years after his death Gandhiji has become a relic of the past, with each political leader setting up himself to be a Gandhi to end all Gandhis What chance has Vivekananda nearly eighty years after his death? Shri Rao's book is likely to be more a vindication of faith than a venture for profit.

—**S. V. Seshadri**

Water Management

Economics of Water Management *by P. Kumar, Heritage Publishers, New Delhi,* 1977, *pp* xiii+117, *Rs.* 20.00

In India, the traditional system of irrigation which consisted mainly of canals was designed to supplement insufficient monsoon. With the advance of research in high-input methods of farming, it has been proved that the traditional methods of water management do not meet the requirements of farmers, with regard to quantity and control of water. The need, therefore, is to make available water to farmer by a network of field channels, at a time in such quantity that his farm requires.

The book under review is a doctoral dissertation submitted to the Indian Agricultural Research Institute, New Delhi, based on the study undertaken in an area covered by the Hirakud canal system. The subject of study was an evaluation of the impact of field channels on the irrigated areas of Sambalpur district of Eastern India

The author, an experienced agricultural economist, has tried to prove empirically the utility of field channels and its concomitant benefits which outweigh the extra investment involved. The book bears ample evidence of the pains taken by the author in collecting data to prove his contention that construction of field channels to replace the traditional irrigation system is worth the trouble That water management deserves such more attention than what has hitherto been accorded to it by planners, is established beyond doubt by the conclusions drawn on the basis of the present study. The book though relied heavily on linear regression model to prove the basic premise, makes an interesting reading for students of agricultural planning and shows the potentials of unexplored area for the planners.

A. K. Guha

Working Capital Finance

Banking and Working Capital Finance *by L. C. Gupta, Macmillan,* 1978, *Price* : *Rs.* 38.00.

This book deals with the problems of the working capital finance in the context of the recommendations made by the Study Group which was appointed by the Reserve Bank of India after the nationalisation of the

najor Indian Banks, to frame guidelines for the follow-up of Bank Credit under the Chairmanship of Shri P. L. Tandon, in 1974. the papers included in this book were originally presented at a seminar hosted by the Xavier Institute, Jamshedpur, in 1976. The papers constitute a comprehensive study of the bank financing of the working capital While expressing their general agreement with the recommendations of the Study Group the seminarists expressed certain amount of apprehension regarding their implementation. Interestingly, while the Study Group has recommended flexibility in the administration of the Inventory and Receivable Norms, it has made the lending norms very rigid. On the positive side the norms would definitely compel enterprises to do more careful cash planning and budgeting.

The editor is right when he states that "in the final analysis how successful the Tandon Study Group's proposals prove in actual practice will depend on the situational and organisational changes in the banking system." This book will be very useful to the post-graduate students of Economics for a clearer and broader understanding of Financing.

K. Gangadharan

There Is Always a Better Way

Four Facets of Business Efficiency by Nalin K. Panda ; Allied Publishers, New Delhi ; Pages 103 ; Price Rs. 30.

Here is a book on improvement of management services. An average manager who wants to improve his office or organisation will find on reading this book that there is always a better way to organise his work. Nalin Panda has presented codification of relevant material based on his experience of setting up of a management services bureau in an East African community.

The author has conviction of Adam Smith's division of labour. As in defence services, everyone is alloted a 'function'—and all functions moving together are of equal importance. The author also believes in motivation and rewards (incentive awards) for improving efficiency in any organisation.

Panda has produced a useful manual on office management that all supervisors either in government offices, public corporations, banks, financial institutions and development authorities should read and follow. It is not easy for an author to write in such an easy and lucid style devoid of modern management jargons. And all training schools should find this book a must on their shelves and as reading material for the in-service training of their personnel.

S. M. Shah

Declining Sex Ratio

Implications of Declining Sex Retio in India's Population by Asok Mitra, Allied Publishers, 1979, Pages 85, Price Rs. 25.00

THERE is steadily deteriorating ratios of females to males in India's popultion and thus there are more males than females in our country. Declining sex ratio in our country has been the subject of much speculation and investigation over the last one hundred years and particularly since the beginning of the 20th century.

In 1891 the sex ratio was 958 females per 1,000 males and in 1971 it decreased to 930 females for 1,000 males and while a decade earlier in 1961 the sex ratio was 941 females per 1,000 males. It must however, be borne in mind that when the first nonsynchronous series of census was taken, Bengal (which then included Bihar and Orissa and Bangaladesh) showed a ratio of 1,001 females to 1,000 males, while Mysore showed a ratio of 944 and Madras 990. The Central Province of those times showed a ratio of birth of between 960 and 930. The Old Uttar Pradesh showed a ratio of 875 while Oudh showed 928 and Punjab (which then included the whole of modern Punjab, Haryana, Himachal Pradesh, Chandigarh and Pakistan) showed a sex ratio of 835. Differential mortality by sex may be responsible for this disparity in sex ratio. Only in Kerala and Dadra and Nagar Haveli the sex ratio is favourable to females and in other places it is favourable to males. In Assam, Haryana, Jammu and Kashmir, Nagaland, Punjab, Uttar Pradesh, West Bengal, Andaman and Nicobar Islands, Arunachal Pradesh, Chandigarh and Delhi the sex ratio is highly favouable to males where it is estimated to be less than 900 females per 1,000 males.

The author points out that this decline has attracted a variety of speculations since 1881 and, lately, much careful analytical research. But no convincing and continuing association or set of possible reasons has yet been identified that could offer a plausible explanation. Most analytical work so far has been confined to the all India or state or provincial level. No analysis yet exists of what may have happened down the decades at the level of the district o rgroups of continguous districts with like trends in sex-ratio. Nor have tracts subregions or regions of like range of sex-ratio deterioration been identified. Asok Mitra talks about a few steps to be considered for the purpose and concludes his stand saying that it seems inescapable that certain protective mechanism of a complex social, cultural and economic nature, which had operated howevery tenuously in the past to maintain a favourable female-male ratio, may have rapidly given way in recent decades.

S. K. Dhawan

Source Book on Fertilizers

N P K in Indian Agriculture—Bibliography (1971-75); published by European Nitrogen Service Programme P.O. Box No 3547 ; New Delhi-110024.

IT is a well brought out volume with a dependable strength of get up and sobriety of aesthetic attraction. This is a comprehensive documentation of about 62,000 references (in more than 300 journals) of published work on NPK in Indian agriculture for the period 1971—75. In the foot-steps of the earlier volume prepared by the publisher on Nitrogen in Indian Agriculture (161- -70) the book is intended to fulfill the need of a source book of Indian technical literature pertaining to research, extension and usage of fertilizers which by and large consist of the use of nitrogen, phosphorus and potassium in different forms and through different fertilizers and manures depending upon related factors in crops and soils.

This reference manual is typically useful and is worthy of any public or personal library.

R. Prakash

Urban Forest

A marathon programme of planting 400 trees a day has been launched by the New Delhi Municipal Committee. It proposes to plant about 1,00,000 trees in an area of 57 acres. The drive is to control the environmental pollution due to high traffic and mass construction of buildings in the Capital. The projects are expected to be completed by the end of the monsoon.

Paddy, Tapioca Crops Rotation

CROP substitution studies by the Agriculture Department of Tamilnadu reveal that the farmers growing tapioca can, by proper planning, also raise Samba paddy crop It would fetch them additional income as well as provide jobs to farm labour round the year. The farmers cultivating tapioca on about 50,000 acres can now profitably raise one short term paddy crop with the main crop. The long duration (10 to 11 months) tapioca can be replaced by short duration (9 months) more disease resistant and high-yielding tapioca varieties which also have higher starch content In places where the well water is limited during summer, the short duration black gram can be raised which matures in about 70 days. □

National Highways in NE Region

THE North Eastern Region will soon have a net work of national highways connecting all the five States and two Union Territories of the region with the rest of the country.

As part of a ten-year massive development programme of transport and communication facilities, this matter came up for discussion before the Committee of Ministers for the economic development of North Eastern Region which held its meeting under the Chairmanship of Shri Yogendra Makwana in Delhi recently.

The development programme may be implemented in two phases, the first phase from 1980 to 1985 and the second phase from 1985—1990.

Apart from the construction of roads and bridges, the Committee discussed the development schemes relating to expansion of railways, speeding up of work on bridge in the Brahmputra, survey for extension of broadguage from Gauhati to Dimapur, strengthening of inland water transport routes and the expansion of postal and tele-communication facilities in the region including the micro-wave project to the States and Union Territories not yet connected, particularly Arunachal Pradesh. □

Anti Pollution Measures In Haryana Factories

THE Haryana State Board for the Prevention and Control of Water Pollution surveyed 1600 factories and tested water samples to detect harmful chemical compounds said the State Chief Minister. Shri Bhajan Lal in a message broadcast on the occasion of World Environment Day from Akashvani, Rohtak. He appealed to the Panchayats to protect village wells and ponds from the inflow of foreign matter to prevent a host of diseases. □

Afforestation Drive In Haryana

THE Haryana Forest Department has drawn up plans to undertake plantation in 7150 hectares of private and Government land and in 7950 row kilometre strip. In addition, 24.5 lakh plants will be planted on individual farm lands. Nearly 19 lakh plants will be supplied to farmers on nominal rates to augment forest resouruces in the State.

These plantations are a part of the plan to supplement fuel, fodder and industrial raw material supply. □

Railway concession To SC/ST Students

THE Railway Ministry have decided to give enhanced concession of 50 per cent over the normal Monthly Season Ticket fares charged from the students i.e. 25 per cent of the normal MST fares to the students belonging to Scheduled Castes and Scheduled Tribes. The concession comes into force with immediate effect. At present, Monthly Season Tickets to students are being issued at uniform concessional rate of 50 per cent. They are also given travel concession for undertaking sponsored educational tours when travelling in groups of 10 and above.

The element of concession is 50 per cent in Second class and 15 per cent in first class □

IDA Credit For Karnataka Silk Project

INDIA is to get a credit of 54 million dollars from the International Development Agency, a Soft Loan Affiliate of the World Bank Group, for the Karnataka Sericulture Project. The project likely to be completed in five years will boost silk production in Karnataka by 100 per cent The loan is interest-free, but a service charge of 0.75 per cent per annum is to be paid. □

Postal Expansion In North Eastern Region

THE P & T Department has prepared a plan to open 200 post offices in the rural areas in North Eastern Region during the year 1980-81 In this area 300 villages will be provided with postal counter facilities through mobile post offices and 2,000 letter boxes will be installed in various place. Employment opportunities will be available to 300 persons to be appointed as Extra Departmental Agents during the year. □

More Outlay For Assam Plan

THE annual Plan for Assam for 1980-81 has an outlay of Rs. 179 crore. It is 15 per cent more than last year's Rs. 155 crore. Central assistance in the total plan outlay will be about Rs. 120 crore. □

Power development has been accorded priority with an allocation of Rs. 68.35 crore to double the present generation capacity. There are also certain development schemes directly undertaken by the Centre, such as streamlining of railways, national highways, border and strategic roads, prospective for oil and natural gas. ☐

Pulp and Paper Mills In Assam

THE Hindustan Paper Corporation Limited is setting up integrated pulp and paper mills in Nowgong and Cachar districts of Assam with an annual capacity of one lakh tonnes each at a capital cost of Rs 228 crores.

Apart from Assam projects, the Nagaland project for an integrated pulp and paper mill with an annual capacity of 33,000 tonnes is nearing completion. The project located at Tuli is close to the rail-head at Anguri in Assam. ☐

Textile Policy

THE Textile Committee in the Commerce Ministry has suggested a clear shift from the handloom to the mill made sector. The consumption trends indicate preference for mill made cloth over handloom fabrics. The committee feels that the demand for mill made and costly qualities of fabrics will be on the rise in future.

Drastic changes as such in the present textile policy, the Committee feels, are essential. Keeping in view the employment potentially of the handloom sector, the government has been emphasising on this. The production target for handloom for 1982-83 has been fixed at 3,700 million metres as against 2,233 in 1977-78. ☐

New Power Units In East

THE power starved eastern region is soon to be fed with new generation units. The proposal is to instal about 3,000 MW of additional generation capacity within a period of four years. The Irrigation and Power Ministry has already given clearance to a 1,000 MW super thermal power project at Kohlgaon in Bihar Another similar project for Mejia in Bunkura district of West Bengal is being considered The World Bank will provide finance for the Kohlgaon project. ☐

Export Promotion In Small Scale Sector

THE Ministry of Commerce has constituted a Steering Committee for promotion of exports of the products of the Small Scale Sector.

The Committee will evolve a suitable strategy for developing exports for Small Industries Sector. It will periodically review the various facilities and programmes of export promotion in order to ensure that assistance under various programmes flow to export-worthy small units in the country. ☐

More Space for Warehousing

THE Central Warehousing Corporation plans to expand its storage capacity by another 3.5 lakh tonnes, this year. Last year, it had increased the capacity to 34.389 lakh tonnes from 30.003 lakh in 1978-79. Its turn over in 1979-80 was Rs. 17.54 crore against Rs. 15.57 crore in the previous year. The target for 1980-81 is fixed at Rs. 20 crore. ☐

Adult Education

THE findings of a review committee of the Union Government reveal that the National Adult Education programme has remained confined to literacy alone and that too has not been much effective.

Since the education programme was not linked with the development programme, the development has been superficial. There is also a lack of clarity among the workers regarding the meaning and content of the programme. Many States like Assam, Himachal Pradesh Madhya Pradesh, Meghalaya and Orissa have not been covered. ☐

Water to all in a Decade

A conference of Chief Engineers of Public Health presided by Mr. K. K. Srivastava, Adviser, Planning Commission resolved to cover 100 per cent of the population with water supply in respect of all Class cities with one million population The overall coverage targeted is 80 per cent. Regarding sanitation there would be a 25 per cent coverage of population in rural areas. ☐

Indian Medicos Abroad

MIGRATION of medicos from India is the largest in the world A WHO study says that about 15,000 Indian MDs are working abroad and they form 13 per cent of the country's total. They are scattered in every country of the world. The migrant doctors represent "a lost investment to the Government of India of $ 14[illegible] million". ☐

Tourism A Major Exchange Earner

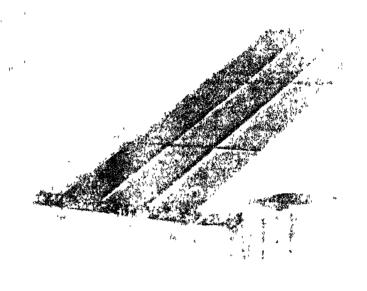
TOURISM will contribute 20 per cent of our total exchange earnings in the year 1980. A ten-year prospective plan is being drawn up to attract 3.5 million tourists to India. It will bring in a substantial amount of foreign exchange to the country. In 1979 the exchange earnings were Rs. 330 crore and by 1990 they are expected to rise to Rs. 5000 crore. ☐

Economic Cooperation With Romania

ROMANIA was prepared to extend necessary cooperation to India with the object of further strengthening economic, commercial and industrial relations between the two countries. This was conveyed to Shri Narayan Datt Tiwari, Union Minister for Planning, in New Delhi recently by Mr. Ioan Abram, Romanian Minister of Machine Building Industry.

Shri Tiwari said that at the moment India's economy needed to be rehabilitated and any cooperation in achieving this objective was welcome. He hoped that Romania would have flexibility in its approach so that assistance provided was suited to the requirements of Indian economy. ☐

Utilising Solar Energy

K. Chockalingam*

Solar drier and air heater, suitable for drying fruits, vegetables, chemicals and even wet clothes.

SOLAR energy is the earliest form of the energy known to man, but unfortunately, the least exploited so far in an organised manner. India being close to Equator, has a tremendous potential of solar energy for its use. Solar Energy is diffused over the earth and so it must be collected from large area using solar collectors, like flat-plate collectors. The capture and conversion of solar energy into a usable form has become a major endeavour and technology and equipments are now available to harness the solar energy. It provides clear energy for variety of purposes. They may be classified arbitrarily as, direct heat source, solar thermal power, photovoltaic cell for direct conversion to electricity and Sea solar power.

Direct heat source

As a direct heat source, solar energy is used by the industry to produce hot water, hot air applications for low temperature ranges, Solar water heaters, solar cookers, air-conditioning etc.

Solar heating device required for low temperature range applications, consists of metallic heater, tubes and plates painted black and surrounded by non-insulating material and enclosed in a wooden box. Solar radiation absorbed by black plates and tubes is used for heating the working medium like water or air flowing throwing the tubes. Hot water at 80—85 degree C is used for bleaching, dyeing in textile industry, and in chemical and pharmaceutical industry, for drying chemical powders and drugs. All these applications require a temperature of not more than 85 degree C.

The solar water heater installation consists of a collector, insulated tank for storing heat in water and

*Former Chairman Tamil Nadu Electricity Board.

two pumps each controlled by a thermostat, to circulate the water into and out of the storage tank. Conventional heating element is also used as back-up during prolonged periods of unfavourable weather. Solar cookers depend upon focussing collectors with tracking mechanism. It is based on concentrating the solar energy by a reflector onto a cooking vessel.

Air conditioning appears to be an attractive use of solar energy. Storage requirements would be smaller when the energy is used for .winter heating. Current solar air-conditioners use absorption equipment-like that used in gas burning or electric heater air-conditioners with solar heat simply substituting the gas flame or electric heater. The Tamil Nadu Electricity Board intends to install an air-conditioning unit of solar Assist Absorption Cooling system in the tenth floor of the new ten-storey building at Madras for demonstration purposes.

Solar Thermal Power

Solar energy can provide necessary high temperatures required to operate turbo-generators efficiently to generate electricity. This is done by concentrating the sun's rays with mirrors or lenses on to metal pipes. Only direct sunlight is usable, thus restricting solar thermal power plants primarily to the sunny areas of the country.

The solar thermal power system is of two types (a) Central Receiver System and (b) Irrigation system.

In the Central Receiver system sun light strikes the heloistat (a sun tracking mirror) and is reflected to the

elevated receiver (boiler) which absorbs the heat and converts water into steam. The steam is then directed to a conventional turbine-generator where electrical power is produced. During the periods when the steam is available in excess, it will be stored in thermal storage system utilising an oil (rock) thermocline principle for storing thermal energy. This stored energy will be capable of producing steam to drive the turbine generator which would give reduced power output (say about 70 per cent) during the periods of cloud cover and in the early evening hours following sun set. After use, the exhaust steam is condensed and the resultant water is again pumped back to the receiver where it is reheated to steam and put to work again. A conventional wet cooling tower is used to cool the exhaust steam.

In the irrigation system, a solar collector field, energy storage plant, solar engine, irrigation pump, controls and water storage pond are necessary. The sun tracking solar collectors raise the tempreture of the heating fluid to about 220 degree C. A thermal control valve then opens to allow the working fluid either to a thermal storage tank or to the heat exchanger. In heat exchanger, this fluid heats Freon to gaseous state to 160 degree C and pressure to about 15 kg./sq. cm. This heated gas drives the turbine which in turn operates the irrigation pump. Exhaust Freon from the turbine is cooled to become liquid and re-used

Photo-voltaic Cell

The advent of semiconductor technology enabled the generation of electricity directly from the sun The technique uses the photo-voltaic effect in metal semiconductors—a process in which an electro-motive force is produced by the incident of light energy from the Sun. Typical photo-voltaic cells consists of a thin slice or film of semi-conductor material such as silicon, gallium, arsenide or copper sulphite. A number of cells can be connected in series or parallel to form blocks of cell, suitable for operating an irrigation pump or any other appliance.

In this power is generated through sea which acts as collector and hence no separate collectors are necessary. Sea covers 70 per cent of earth's surface and vast amount of solar energy is collected and stored by sea water. Separate and expensive energy storage is therefore not required.

Ocean Thermal Energy Conversion (OTEC)

The O.T.E.C. derives its energy from the temperature differences between cold water from great ocean depths and the warm surface waters that occur in tropical and semi-tropical climates. It is the action of the sun in heating the surface waters that makes the [illegible] of the broad spectrum of solar technologies. [illegible] plants use a working fluid, such as ammonia or freon that boils at temperatures and are liquified slightly above the temperature of the cold water brought from the ocean depths. The OTEC's energy is derived from directing the vapour of the working fluid through a turbine connected to an electric generator. The exhaust vapour from the turbine is then liquified in a condenser. The condensed working fluid is then pumped to a vaporiser where the cycle begins again.

Tamil Nadu is geographically an ideal place to tap thermal energy from the sea. The surface of the sea is warm about 26 degree C— 28 degree C, while at a depth of about 3,000 feet the temperature drops to about 6 degree C. The Thermal gradient (about 20 degree C) is available close to the Tamil Nadu coast and it is more or less constant in all reasons Tamil Nadu Electricity Board is investigating the possibilities of establishing 25 MW plant on the east coast of Tamil Nadu

The cost of solar systems is initially much higher than that of a conventional system. Yet in the long run, they promise to be lower than other systems which are dependent on conventional fuels with their rising prices, shortage and higher environmental costs. More than the cost itself, the availability of energy resources is vital and for a State like Tamil Nadu where there are not large coal or oil reserves when hydel potential has been almost exhausted, use of solar energy which is available in abundance, is of very great importance The earlier the State goes in for solar energy, the better it is for the economy of the country. □

A Farm On The Border

Anu Bhushan

AN uninhabited chunk of land situated on the Indo-Pak border near Jammu was once offered to Chhamb refugees for their permanent settlement but they rejected it. Now this border land has turned out to be a green gold mine of Jammu & Kashmir State This area has been developed into State's pioneer mechanised agricultural farm, popularly known as Chinore Seed Farm. This farm has helped the State to become self-sufficient in the production of high yielding varieties of Wheat Seed.

On rejection by DPs, the land was handed over to the State Department of Agr[illegible] 1968. The 2540 acre [illegible] was adequately mechanised by installing sophisticated agricultural implements worth Rs. 27 lakh including some imported ones. Against the State's annual cumulative requirement of [illegible]540 quintals of high yielding varieties of Wheat Seed, the Chinore Farm alone contributes 10,400 quintals of seed to the State's kitty, [illegible] remaining is met from other small farms. Qualitywise also the Chinore Farm Seed compares well with that of the National Seeds Corporation The cultivation of HYV rice seed is also taken up at the Farm. □

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yojana

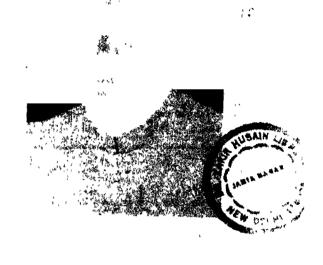
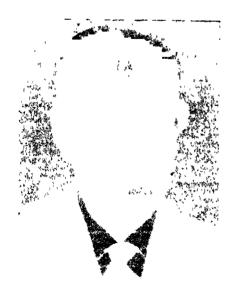
SPECIAL NUMBER

30 YEARS OF PLANNING

RUPEES TWO

President

THE President of India is glad to know that on the occasion of the Independence Day a Special Number of 'Yojana' is being brought out on "Three Decades of Planning". The President sends his best wishes for its success.

K. Suryanarayana
Press Secretary

Vice President

I am glad to learn that all editions of 'Yojana' are bringing out a Special Number on August 15 this year on the theme of "Three Decades of Planning". With limited resources, allocations of funds according to priorities is esssential and for achieving this role of Planning Commission is important. A review of what has been done during the last three decades will be helpful in planning for future.

I send my best wishes for the success of Special Number of 'Yojana'.

M. Hidayatullah

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Chief Editor
P. Srinivasan

Editor
Sethu Rao S.

Assistant Editors
R R. Rao, K. P. Chopra,

Sub-Editor
Vijay K. Verma

Senior Correspondents

Bombay : **Avinash Godbole**
Calcutta : **S K. Ray**
Hyderabad · **B. N. Murthy**
Madras · **T. R. Panchapagesan**
Gauhati . **R. N. Bez Baruah**

Photographic Officer : **P. K. De**
Artist : **P. K Sen Gupta**
Cover design : **Parmar**
Advt. Manager **T. R. Maheshwari**

Editorial Office

Yojana Bhavan, Parliament Street, New Delhi-110001. **Telegraphic Address:** Yojana, New Delhi. **Telephones:** 383655, 387910, 385481 (extensions 402 and 373) **Circulation** Business Manager, Publications Division, Patiala House, New Delhi-110001.

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Development's Three Decades

EVEN while struggling for political freedom, our leaders were fully conscious of its economic and social contents—in fact, these formed parts of that struggle itself. For example, Gandhiji's 'Swadeshi movement' and 'Constructive Programme' were important aids to the political movements like those of 'Non-Cooperation' and 'Quit India'. In the late thirties the Congress appointed a Planning Committee under the leadership of Jawaharlal Nehru for preparing plans for national reconstruction. Nehru was destined to later become the architect of free India's development under five year Plans.

Industrialisation is the hallmark of development and all backward countries try to industrialise themselves under one system or another. In the case of pioneers like Britain, the wealth from colonies provided the motive power for the industrial revolution. The United States, with its sparse population, was able to industrialise itself from its own rich natural resources, with initial help from Europe. Japan set up industries mainly out of the surplus squeezed out of its agriculture. The planned industrialisation of Soviet Russia was made possible by the ruthless determination and iron discipline of a Stalin.

India, which was a late-comer in the field of industrialisation did not have any advantage of the advanced nations. On the contrary, it had the additional disadvantages of nearly two centuries of colonialism, the ravages of the Second World War, communal killings and Partition, over-population, massive illiteracy, strong remnants of feudalism, stagnant agriculture, political democracy with its rising expectations preceding economic progress, etc.

Amidst all such problems and in order to conquer them we set forth on the path of planned development thirty years ago. We have so far carried out five 'Five Year Plans' and three annual plans and are in the first year of the sixth five year plan.

The basic principles which have governed planning in India are unique and cannot be classified under any ideological brand name. For example, before we started planning it was taken for granted that planning would involve abolition of private property and democratic rights. But our planning has respected democratic and property rights of the people, even though it involved slower growth. In fact the plans themselves are finalised only after widest consultations with various segments of the people and the approval of the Parliament. Another unique feature is the balancing and coexistence of various economic elements so as to maximise national development—e g., the public, private and joint sectors; heavy and light industries; and big, medium, small and cottage industries. The government has, whenever necessary, curbed only the seamy aspects of capitalism and not capitalism as such; it has in fact been giving all possible help to enterprising private entrepreneurs. Yet another feature is, instead of exploiting agriculture for getting industrial capital, our Plans have given priority to the development of the primary sector. It was unavoidable for us to receive assistance from advanced countries for our development. But we never compromised our principles for the sake of aid; nor did we confine cooperation to any big power or block of powers but cast our net so wide that no power could dictate terms to us. Moreover, from the third Plan period onwards we intensified our efforts towards self-reliance with considerable success. Further, from the very beginning we did not consider development as an end in itself but only as a means to people's welfare. The plans have not only been allotting more and more funds for social services but have stressed the reduction of inequalities in wealth and income.

The fact that each Plan has been much bigger than the preceding one itself indicates the growth of our economy : the outlay on the first five year Plan was Rs. 2069 crore; it went up to Rs. 53,411 crore in the case of the fifth Plan. The total outlay on all the Plans so far comes to about Rs. 1,02,634 crore. There can be difference of opinion as to whether our economic growth is commensurate with this much outlay, but there can be no doubt that considerable development has been achieved in the past three decades. The Gross National Product has been increasing at an average annual rate of 3.8 per cent over this period. The structural change in the economy that has taken place is reflected by the decrease in the share of agriculture in the GNP from 59.6 per cent to 44.6 per cent with corresponding increase in the share of the secondary and tertiary sectors. Under Nehru's far-sighted leadership, strong foundations, consisting of power, irrigation, transport and basic and heavy industries were laid so that the multistoreyed super-structure of the economy could be speedily built up. At his time he was criticised by many for 'giganticism' and 'visionariness', but even the considerable infra-structure facilities built up so far have become inadequate for our growing needs. As already mentioned, the progress towards self-reliance has also been substantial. Apart from sophisticated defence equipment, we are now producing space satellites, nuclear power, electronic goods, petro-chemicals, etc. We have also built up a large cadre of scientists and technologists, some of whom we are able to spare to other countries.

Let us take some individual fields under the Plans : Our irrigation potential has inceased from about 25 lakh hectares to 153 lakh hectares. Fertilizer production has increased 149 times. The installed capacity for power generation has increased more than 13 times and we are now fabricating even heavy electrical equipment within the country. It may also be mentioned here that over 45 per cent of our villages have been electrified and 40 lakh pumpsets energised. There has been phenomenal increase in rail, road and shipping transport facilities. Coal production has increased from less than 3.5 crore tonnes to 10 crore tonnes. Petroleum production which was insignificant in quantity and owned by foreigners, has increased more than forty times and the industry is now owned by us. We have dug up new oil wells not only on land but under the sea. The production of steel, which is basic for industrial growth has gone up from 14.7 lakh tonnes to 86.4 lakh tonnes. The production of the versatile metal, aluminium, has increased more than five-fold. In short, from a very insignificant position, our country has now risen to the tenth rank among the industrialised nations of the world. Social services, such has health, education, etc., which are investments in human development, have also been considerably expanded. Life expectancy has gone up from 32 to 52 years and literacy from 16.6 per cent to 29.45 per cent. Various special schemes are being implemented for the weaker sections and backward areas. Legislations have also been passed for protecting agricultural tenants, landless workers, industrial labour, etc. Employment, which is the basis of social justice has also increased—in the organised sector alone jobs rose from 155 lakh in 1966 to 222 lakh in 1979.

The articles inside this issue show in detail our achievements in various fields during the thirty years of planning. But we have to remember, at the same time, that we could have done much better and that poverty and other basic problems still remain largely unresolved. Forty to 50 per cent of the people still live below the poverty line. Many villages in the country do not have even drinking water facility. The better-off sections have been getting a disproportionately larger share of the fruits of development. Regional imbalance in development also continues to exist even though our planners have been conscious of it from the beginning of planning. The jobs created under the development projects have been just a drop in the ocean of unemployment which is further growing with addition to the working force every year. About 73 per cent of the working force still depends on agriculture for livelihood. Agrarian reforms and labour legislations, which are unexceptionable in themselves, are not effectively implemented, with the result peace on the farms and in the factories is often disturbed and production is affected. Unless property rights are restructured and income disparities are reduced, poverty and unemployment cannot be removed. Simultaneously, more vigorous campaign should be launched on the family planning front. Limiting the growth of population is essential for our survival and even communist countries like China are implementing family planning measures.

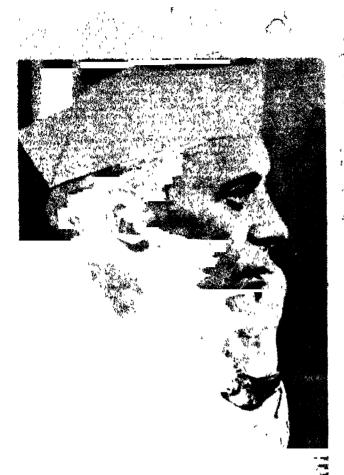
Another chronic problem that is vitiating the national economy is the existence of black money. It functions as a parallel economy, helps hoarding, profiteering and smuggling and frustrates government's fiscal and monetary policies. Unless it is eradicated, it will not be possible to reduce or stabilise prices.

The enormous escalation in the cost of and time for executing Plan projects, and the wide fluctuations in the rates of growth are the very negation of 'planning' and should be checked by the concerned ministries and departments. The status, scope, functions, methods and organisational strength, etc., of the Planning Commission itself should also be reconsideed in the light of three decades of experience so that the tentativeness and vagueness of planning may be removed. Further, since planned development is meant for conquering nature, the regular, visitations of floods and droughts also cast doubts on the effectiveness of our planning.

The productive capacities created at heavy cost are not fully utilised both in the private and public sectors either due to profiteering motive or inefficiency. If this is remedied many of our shortages can be reduced and the growth rate of the economy increased.

It is well-known that the returns, if any, from the public sector undertakings are very low in comparison to the investment made in them. But no effective measures have been taken to remedy this situation while the recours to taxation for mobilising resources for development continues. Here also pragmatic structural changes have to be considered in keeping with the dynamics of our mixed economy.

As the imports of fossil oil cause an unbearable burden on our economy, we have to intensity our efforts to limit its consumption, to strike new oil wells and to find out alternative sources of energy. Similarly, we should be very cautious about multi-national companies so that our economic independence is not corroded.

Political instability, internal disturbances and border wars have periodically slowed down our development work. It is within our power to remain united, maintain peace and incease our strength so that nation-building work can continue within the protective ambit of our political sovereignty as symbolised by the front cover of this issue of Yojana. □

Jawaharlal Nehru on Nation - Building

Why Planning

I need not advance any argument about the necessity of planning. Whatever it may be in other countries, in under-developed countries like ours, which have to develop fairly rapidly, the time element is important and the question is how to use our resources to the best advantage. If our resources are abundant it will not matter how they are used. They will go into a common pool of development. But where one's resources are limited, one has to see that they are directed to the right purpose so as to help to build up whatever one is aiming at.

*** *** *** ***

Essence of Planning

When I see these two heavy volumes of the Report of the Planning Commission, my mind conjures up the vision of something vast—the mighty theme of a nation building and remaking itself. It is obvious that India must be industrialised as rapidly as possible. And industrialisation includes, of course, all kinds of industry—major, middling, small, village and cottage. However rapid our industrialisation may be, it cannot possibly absorb more than a small part of the population of this country in the next ten, twenty or even thirty years. Hundreds of millions will remain who have to be employed chiefly in agriculture. These people must, in addition, be given employment in smaller industries like cottage industries and so on. Hence, the importance of village and cottage industries. I think the argument one often hears about big industry versus cottage and village industry is misconceived. I have no doubt that we cannot raise the people's level of existence without the development of major industries in this country; in fact, I will go further and say that we cannot even remain a free country without them.

Your objective must be to put an end to all differences between class and class, to bring about more equality and a more unitary society—in other words, to strive for economic democracy.

A Plan of this type does not merely mean establishing a number of factories or increasing production in some instances That, of course, is necessary but something with a deeper significance, something that aims at the gradual development of a particular structure of society has to be achieved.

It is the essence of planning to have a broad idea of the kind of control that should be exercised over the economy of the country. This Plan deals with both the public sector and the private sector. The private sector is also going to be a controlled sector. Of course, it will not be controlled to the same extent as the public sector; but it will, nevertheless be increasingly controlled as time goes on.

We certainly attach importance to industry; but in the present context we attach far greater importance to agriculture and food and matters pertaining to agriculture. If our agricultural foundation is not strong then the industry we seek to build will not have a strong basis either Certain basic and key industries have been given due consideration. The essential basis for development of industry is power—electric power. The progress made by a country can be judged by the electric power it has. Provision has been made for electric power in the various hydro-electric and multipurpose schemes in the Plan.

Provided we are strong enough ourselves, I really do not see why we should be afraid of accepting the kind of aid that helps us to progress more rapidly. With that aid we could do many things which we would have to postpone otherwise. Foreign aid involves a slight risk, not so much of being tied down as of compromising in a moral sense. There is no reason, however, why we should be afraid of accepting aid, if it does not influence our policy or our activities in any way.

(15.12.52)

*** *** *** ***

The Poverty Barrier

We are struggling to get out of the morass of poverty, and to reach the stage of what is called "the take-off into sustained economic growth. We want to cross the barrier of poverty and reach the stage where growth becomes relatively spontaneous. The underdeveloped country is on this side of the barrier. There are certain cumulative processes at work which

in a developed country, tend to encourage its growth further and further and which, in an under developed country, pull it back all the time. The poor becomes poorer. Poverty becomes its own curse. It repeats itself. Planning is essentially a process whereby we stop those cumulative forces at work which make the poor poorer, and start a new series of cumulative forces which make them get over that difficulty.

Perspective Planning

(1) We are to build up, by democratic means, a rapidly expanding and technologically progressive economy; and (2) we are to establish a social order based on social justice and offering equal opportunity to every citizen. These objectives have to be kept in view all the time. Therefore, it is necessary for us to have not only a Five Year Plan, but a plan with longer perspective. We propose to have the perspective plan approach. We have been making that approach all these years, but hereafter it will be a more definite one for the next 15 years.

*** *** *** ***

Planning and Defence

The Five-Year Plan is the defence plan of the country What else is it ? Because, defence does not consist in people going about marching up and down the road with guns and other weapons. Defence consists today in a country being industrially prepared for producing the goods and equipment of defence.

You cannot have a factory producing tanks in the absence of other industrial development in the country. A factory producing aircraft can be erected only if there is a large supply of technically trained people. Therefore, our immediate object should be, both from the point of view of economic development and that of defence, to build up industry, heavy industry in particular.

*** *** *** ***

Our Socialism

I do not see why I should be asked to define socialism in precise, rigid terms. What I want is that all individuals in India should have equal opportunities of growth, from birth upwards, and equal opportunities for work according to their capacity.

We must realize that the process of bringing socialism to India, especially in the way we are doing it, that is, the democratic way, will inevitably take time.

*** *** *** ***

Industrialisation

Hon. Members who have studied the history of other countries probably know that too much stress on heavy industries has produced difficult problems in those countries. In fact, the price paid for rapid industrialisation has been terrific in some socialistic countries. I am certain that no country with any kind of parliamentary democracy can possibly pay it May be, where there is a dictatorship with an army behind it, they may be able to do it. But even a dictator cannot go too far without the consent of the people Real progress must ultimately depend on industrialisation."

(In the Lok Sabha, 1-12-54)

*** *** *** ***

Shri Jawahar Lal Nehru is seen signing the Five Year Plan document. The Planning Minister, Shri Gulzari Lal Nanda and Finance Minister Shri Morarji Desai are also seen in the picture.

Industrial Policy

There is much discussion about the public sector and the private sector. I attach great importance to the public sector. The pattern of society that we look forward to is a socialist pattern of society which is classless, casteless. But I would beg of you not to imagine that because socialism conceives of nationalised industry, therefore you must have all industry nationalised. I think that as the socialist pattern grows, there is bound to be more and more nationalised industry, but what is important is not that there should be an attempt to nationalise everything, but that we should aim at the ultimate result, which is higher production and employment. If by taking any step you actually hinder the process of production and employment from growing, then that does not lead you to the socialistic pattern. In a country like India, where money, trained personnel and experience are lacking, we have to take advantage of such experience, training and money as we have. We want to make this business of building up India a co-operative enterprise of all the people.

Some people might talk about private enterprise and laissez faire, but practically nobody now believes in laissez faire. There is regulation and control all over the world in regard to industry and imports and exports. Everywhere, even in the most highly developed countries of the capitalist economy, the State functions in a way which possibly a socialist fifty years ago did not dream of.

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Public Sector

It is interesting to see other countries where there are public enterprises; there they have arrived at the conclusion that they must give freedom to the man in charge. Of course, if there is a major loss, if the whole thing goes to pieces, then the man in charge will suffer. But the point is that he is given responsibility. Every person who has advised us, whether he is an American like Dr. Appleby, or a great Russian leader like Mr. Mikoyan, has told us : 'Do not interfere with your enterprises' give your executive responsibility, do not interfere".

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Industrial Relations

This business of strikes and lock-outs should be

faced. Apart from the wastage involved, this conflict is illogical and wrong. The only other way is to find mutual agreement, or if there is no mutual agreement, to bring in some third party in the shape of conciliator, arbitrator or tribunal.

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Cottage Industries

I believe that even now there are far more people employed in the handloom and hand-weaving industry in India than in all the organised industries. Are we to ignore these millions simply because of some economic theory ? An autocratic or authoritarian government might do it; it might enforce its will at a terrific cost. But no democratic government will do it. Why do we, after all, want industrialization, and the adoption of the latest techniques ? Not for the sake of merely having a big factory or a big machine, but for human betterment, for the betterment of the people of India. Are we going to have human betterment today? These questions cannot be dealt with by some kind of abstract economic theory. The happiness and wishes of millions of people are involved.

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Population Control

We have to come to grips with this problem of population. It does not become some kind of a theoretical concept. We have to plan in terms of food, clothing, housing, education, health, work, etc., and we realise that some kind of limitation of the rapidly growing population becomes an urgent matter for us. It was for this reason that we were driven to consider this question of family planning as a part of national planning.

If educational standards in the country go up, the problem becomes simpler. If the general living and economic conditions improve, it becomes simpler again. This fact should be appreciated because then the movement of family planning becomes a part of the larger movement for raising the standard of living of the people.

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Inside a cottage match factory—female workers seen packing match boxes

Shri Jawahar Lal Nehru presiding over a Planning Commission meeting

Women's Progress

A social revolution includes evryone, but it especially pertains to women. If the women do not change or progress, social life remains more or less static. And one of the most interesting and far-reaching changes which I think are coming over India today is the change among the women of India. It has occurred to a great extent in regard to women in cities and towns and has begun even in the rural parts of our country. Once it spreads adequately in the villages, this social revolution will bring tremendous results.

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Price Control

It goes without saying that it is of the utmost importance that prices should be under control. But a price policy is not separate from the rest of economic activity. It cannot be separated from fiscal or monetary or commercial policy, and it might well involve controls In certain essential articles, if necessary, it may involve all kinds of approaches including controls.

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Deficit Financing

Finance is important but not so important as people think. What is really important is drawing up the physical needs of the people and then working to produce things which will fulfil such needs. If you are producing wealth, it does not matter very much if you have some deficit financing because you are actually putting money back through goods and services. Therefore it does not matter how you manipulate your currency so long as your production is also keeping pace with it. Of course there is the fear of inflation. We must avoid it.

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Importance of Technicians

Scientific and technical personnel should be introduced not only in the technical processes but in administration also. The administrator is an able man and does a good deal but his thinking is on different lines from that of a technical man. I think there should be a greater inclusion of the technical and scientific type of thinking in our administration. It

is good to mix the pure administrator with the technical man and the scientific man. After all, all problems today are problems of science and technology An able administrator or an able politician, just as an able lawyer, can grasp the broad outlines of a problem, but it is another thing to have grown up with all the processes. I think, therefore, the scientists and technicians should be associated more and more with administration and planning.

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Rural Development ... .

Over 80 per cent of our people live in the villages. India is poor because the villages of India are poor. India will be rich if the villages of India are rich Therefore the basic problem of India is to remove the poverty from the Indian villages. Firstly, each village should have a semi-autonomous panchayat. It should have a cooperative. It should have a school. The cooperatives have in the past been chiefly societies for credit purposes. But we want the cooperatives to perform many other services. While the panchayat will represent the administrative aspect of village life, the cooperative will represent the economic side of villag life.

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Land Reforms

A proper land policy is essential for the progre of agriculture. We have gone some way towarc achieving this by putting an end to the zamindari an jagirdari systems in many States. We must complet this task, eliminate all intermediaries and fix a lim for the size of holdings. We hope that the next ste will be cooperative farming which will take advan tage of the latest agricultural techniques. (31-12-52)

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Employment

Every modern economic theory today bases itsel unlike the previous ones, on full employment in th country. We cannot produce employment by legisla tion. Our economic approach must be such that w can reach the stage of full employment within a measurable period of time. Every one of our step must be aimed at that.

Thirty Years of Planning : Successes and Failures

Narayan Datt Tiwari*

THE importance of planning as the basis for economic development has been recognised in India for a long time. Even before independence a National Planning Committee was constituted by the President of the Congress party with Pandit Jawaharlal Nehru as the Chairman. Despite the interruption of the second world war and the imprisonment of its Chairman, the Committee did a lot of work and produced a number of reports which led to a very fruitful debate on the problems of planning.

From a formal point of view planning in India began with the establishment of the Planning Commission by a Resolution of the Government of India dated 15 March, 1950. Since then, the Planning Commission has prepared five Five Year Plans, two draft plans which were never finalised and at present is engaged in preparing the Sixth Five Year Plan for the period 1980-85. Thirty years is a long period for any organisation and it is time to take stock of what we sought to achieve and what in fact we have achieved.

The basic objectives of development policy have been articulated differently in different Plans but in essence they boil down to four things : first, rapid economic development, second, modernisation and structural transformation of the economy, third, the attainment of self-reliance and fourth, the removal of poverty and inequality. The question that we should ask is the extent to which we have achieved our targets with respect to these objectives.

Growth

With regard to the first objective it is instructive to compare our achievements with the development perspective presented in the First Five Year Plan. This Plan envisaged a doubling of per capita income by 1977. In actual fact per capita income in 1977-78 was about 50 per cent higher than the 1950-51 level,

*Minister for Planning and Deputy Chairman of the Planning Commission

so that the shortfall relative to the First Plan perspective is very substantial. What is this due to ? Basically the First Plan perspective involved certain assumptions about the savings and investment rates, about the capital-output raio and about the rate of population growth. By and large, the assumptions about the investment rate have been fulfilled and, to some extent, even exceeded. Therefore the shortfall cannot really be attributed to any failure to mobilise resources for investment. The real problem lies with the other assumption about the rate of population growth. The First Plan assumed a population growth rate of 1.25 per cent so that, according to it, the 1977-78 population would have been 502 million, whereas in fact it was around 629 million. If the First Plan population projections had been correct the level of per capita income in 1977-78 would have short of the doubling target only by 10-15 per cent. This residual shortfall is probably attributable to the capital-output ratio being somewhat higher than what was anticipated.

The gap between performance and promise looks somewhat worse if we look at the perspective presented in later Plans. Thus, the Third Plan, for instance, envisaged an increase of about 60 per cent in per capita income between 1960 and 1976. In fact the improvement was only about 18 per cent and in this case the shortfall cannot be attributed to an unforeseen excess of population growth. In this last period the shortfall is attributable largely to the capital-output ratio turning out to be much worse than anticipated. On an overall basis the average annual growth rate of GNP over the Plan periods has been about 3.8 per cent which is well below what we have aimed at and what we need to achieve

Modernisation

With regard to the second objective of structural transformation and modernisation, a comparison of targets and achievements is more difficult since long-term targets in this area have not always been clearly specified. One important area of structural transformation lies in the expansion of industry and related sectors so that the economy is less dependent on primary sector production. We have made some progress in this direction: between 1950-51 and 1977-78, the share of the primary sector in national production fell from 59.6 per cent to 44.6 per cent and the share of the secondary sector rose from 14.5 per cent to 22.2 per cent. However, a careful look at the data shows that the bulk of the transformation was achieved in the Third Plan period when some of the major tasks of import substituting industrialisation were achieved. Since then the process of structural transformation has not been as rapid possibly because we have not found an engine for industrial growth as powerful as the one provided by the simple objective of import substitution in the Second and Third Plans.

The second major area of modernisation is in agriculture. In this area our achievements are formidable. At the time of independence we inherited an agriculture that had been stagnant for decades. There were pockets of modernisation and development in some plantation areas and in areas where commercial crops like sugarcane, cotton and oilseeds were grown. But the general picture was that of stagnation. Over the past 30 years this has changed greatly. Over vast areas of the country a fundamental change in the mode of production in agriculture has been brought about by planning. The abolition of landlordism and zamindari, the extension and modernisation of irrigation, the spread of the new high-yielding seeds-fertilizer technology, the development of cooperative credit, the controlled mechanisation of farm operations, the growth of regulated markets and procurement by public agencies, the establishment of producer-owned agro-processing industries—all these are manifestations of a fundamental change in the manner in which agriculture and rural society is organised. The result in terms of output growth is quite creditable and in fact we have achieved or exceeded Plan targets for foodgrain production in three out of five Five Year Plans :

Foodgrains: Targets and Achievements

(million tonnes)

Plan	Target	Achievement
First	63	67
Second	82	82
Third	102	72
Fourth	129	105
Fifth	126	131

The shortfalls were greatest at the end of the Third and the Fourth Plan targets because of the impact of drought.

Self-reliance

With regard to the third objective of self-reliance we can now say that, despite severe odds, we have come through and attained much of what we had set before ourselves. In our Plans self-reliance has generally been articulated in terms of the dependence on aid. The first two Plans were not very much aid-dependent as we had a large sterling reserve inherited from the past with which to meet balance of payment deficits, and gross aid amounted to 6 per cent and 27 per cent of imports in the First and Second Plans respectively. Our dependence on external assistance rose from the Third Plan onwards and the rate of gross aid to imports rose to 46 per cent in the Third Plan and 51 per cent during the Annual Plan period from 1965-68. However, at this age stage we articulated our objective of self-reliance and worked towards the gradual elimination of aid-dependence through a judicious combination of import substitution and export promotion and the aid-import ratio dropped to 39 per cent in the Fourth Plan. By the Fifth Plan we had built up a highly diversified export base and, despite the oil crisis, we succeeded in reducing our aid dependence to about 30 per cent and building up a high level of foreign exchange reserves by the end of the Plan.

There is another more vivid way of seeing the growth of self-reliance. During the drought of 1965-66 we needed a substantial measure of aid and food assistance from the international community to manage the situation. In 1972-73 we had to resort

to imports but did not have to seek food aid. In the latest drought we managed even without resorting to foodgrain imports because of the level of stocks that had been built up.

There are many other dimensions to self-reliance besides aid dependence. It also requires the promotion of domestic production in strategic areas where we could be vulnerable to international pressures. The case of foodgrains has been mentioned but there are other such strategic commodities—e.g. oil, defence supplies, atomic energy, etc. We also have to rely more on our own resources for our development effort not just in terms of finance but also in terms of physical factors like the supply of machinery and construction material, the availability of project management and engineering capabilities, the development of science and technology, etc. In all of these areas we have reached levels of development that are the envy of the developing world. In fact this is one area where our achievement is substantially greater than what other developing countries have achieved.

Removal of Poverty

With regard to the fourth objective of poverty removal and an improvement in living standards much remains to be achieved. It is not that there are no successes in this area. The increase in the expectation of life, the reduction in the incidence of diseases like small-pox, malaria and cholera, the slow but definite increase in per capita consumption, the much wider ownership of durables like bicycles, sewing machines, radios and watches, the improved access to education and health facilities, better communications—all these affect the common man and have led to some improvement in the standard of living. Nevertheless much needs to be done. The percentage of population below the poverty line continues to remain unacceptably large. Estimates vary but it could be between 40 and 50 per cent to the population. In many parts of the country basic facilities like drinking water, primary education and health care are not readily available. Under-nutrition and malnutrition are widespread. Regional disparities are also very large. Many of these problems arise from the fact that the benefits of growth are very unequally distributed, a deficiency that was recognised by planners. Over the past 15 years or so we have made deliberate efforts to reduce these inequalities by making a special effort to direct benefits to weaker sections and to reduce disparities on levels of development amongst regions.

Two Basic Factors

The catalogue of successes and failures listed above should be analysed carefully to identify action points for the future. Not all the shortcomings are of our own making and they are attributable to some extent to factors beyond our control. Two such factors are particularly important : the weather and the international environment.

Indian planning is still, to a very great extent a gamble on the monsoons. The severe drought of 1965-66 disrupted our development effort to such an extent that systematic planning could not be resumed for three years. The impact of other droughts on planning has been less severe but even then weather-induced fluctuations in agricultural production have led to a great deal of instability in overall growth. Even if we leave out the extreme drought year of 1965-66, the rate of growth of GNP has fluctuated between two per cent and 10 per cent. These fluctuations in income growth have a very harmful effect not just on agriculture but also on industry. The cutbacks in investment that become inevitable in a bad year can seldom be made up in a good year. The urge to invest and expand production can only come when there is sustained and steady increase in national income year after year. Hence the importance of insuring the economy against the vicissitudes of the weather. We have done this to some extent by the expansion of irrigation and the building up of buffer stocks. But much more needs to be done—e.g., improvements in the technology of rainfed agriculture and a reduction in the fluctuations in the output of commercial crops like cotton and oilseeds.

The second factor that is to some extent outside our control and that impinges on Plan performance is *the international environment*. Three Plants have been disrupted to some extent by our having to flight wars which were not of our own making. Twice the flow of external credit has been abruptly reduced. In recent times we have had to cope with an unprecedented increase in oil prices and a galloping world inflation. We have had to face restrictions on our exports, artificial shortages of key materials like fertilisers in world markets, barriers to the acquisition of technology and so on. Many of these difficulties arose because of our independent foreign policy. Fortunately self-reliance has been a keynote of our development effort from the beginning and our vulnerability to international pressures is much less than of many other developing countries. Much can be done to make the international economy more stable and it is necessary that we should promote international cooperation and Third World interest in matters like commodity agreements, trade negotiations, international monetary reform and so on.

Our Deficiencies

The weather and the international environment do not account fully for the gap between performance and promise. There are other shortcomings which are within our control and which we have to remedy ourselves.

The first and the most fundamental shortcoming is the fact that the existing production potential of the economy is not being fully realised. In agriculture irrigation potential is not fully utilised and yield rates over vast areas are far below what is attainable with known technology. In key infrastructure sectors like power and transport capacities created are unutilised for a variety of reasons : unforeseen breakdowns, labour problems, shortages of inputs, bad management, etc. Capacity utilisation in industry is low and in some sectors we have to use valuable foreign exchange for imports to make up for shortfalls in production. These shortfalls in capacity utilisation explain to some extent the adverse change in the capital-output ratio. The under-utilisation of existing potential is, in the final analysis, a management problem, whatever the immediate causes may appear to be. When this problem prevails in farms and small enterprises not much can be done in the short run though

improved methods of extension should help. But a large part of the problem lies in public enterprises like electricity boards, railways, transport undertakings and industrial enterprises. In these cases a performance-oriented management system has to be brought in at the earliest.

A related deficiency which accounts for much of the gap between target and achievement is the tardiness in the implementation of projects. Delays running into years rather than months have been common in large irrigation, power and industrial projects. Cost escalations in projects have thrown Plan calculations off balance. These deficiencies are attributable to a variety of reasons but one conclusion is inescapable : better project planning and efficient project implementation are vital if we are to close the gap between targets and achievements.

A third area which requires urgent attention is the renewal of industrial growth. The tempo of industrial development that was built up in the Second and Third Plans has tended to falter. To some extent the problems faced in this area are a product of the shortfall in other sectors like power, transport and agriculture. Hence any improvement in these other sectors should lead to some revival in industry. But we need something beyond this. The programme of import substitution and the development of basic industry provided a definite focus for industrial development in the first phase of development. Today the major tasks of import substitution in industry have been achieved and we need some other guiding principle to provide a focus to our efforts.

In the area of rural development the major shortcoming lies in the fact that much of the development is concentrated in a few areas of the country and that the weaker sections have not benefited in full measure. We have a strategy for the development of agriculture in irrigated areas and much has been achieved. We must now work for an increase in the pace of development in other areas like the rain-fed plains, the drought-prone areas, hill areas and so on. We must also make a more determined effort to raise productivity and income levels of small farmers, agricultural labourers, scheduled castes and scheduled tribes in all areas.

Need for Family Planning

The promotion of rapid agricultural and industrial development carries one risk to which we have paid limited attention so far : that of environmental damage. Deforestation in hill areas and elsewhere, abnormal siltation of reservoirs, soil erosion, salinity caused by excess irrigation, abnormal changes in the water tables, destruction of wild life., air and water pollution in urban areas : all of these are present in some measure in India. We are still at an early stage of development and we can avoid many of the environmental problems that affect developed countries. Hence we must now consciously seek to identify ecologically sound development policies and ensure that they are reflection in our Plan projects and programmes.

Finally, the problem of population growth. Many of the gains of our past efforts have not been reflected in a visible improvement in per capita living standard because of population growth. Without an attempt at fertility control, all our efforts at improving the income of weaker sections may come to nought. We have had an organised family planning programme for a long time. Increasingly we are linking it with other health programmes to provide a total family welfare package. We need to pursue this path vigorously by adopting and applying practically all of the non-coercive methods since any delay will compound the problem and make it even more difficult to restrain population growth.

The catalogue of successes and failures and the lessons that we can draw from them is by no means complete. In the final analysis the detailed reasons are not as important as the basic determinant of development : the collective national will to forge ahead ambitiously. Success should not lead to over confidence nor failures to despondency. What they should lead to is a strengthening of our determination to overcome obstacles and to succeed. □

Some Reminiscences and Suggestions on Planning

V. K. R. V. Rao*

I have been connected in some manner or the other with the Planning Commission from its inception in 1950. I was a member of the Planning Advisory Board which was attached to the first Planning Commission, and then the panel of economists which did some work for the 2nd Planning Commission. I was also Chairman of the Programme Evaluation Board for a while and then of course served on a number of panels that the Planning Commission set up. I became myself a member of the Planning Commission in 1963 and left at the end of 1966 to become a Cabinet Minister in 1967. During the four years of my tenure as Minister, of course, I had something to do with the Planning Commission as a member of Government. Then from 1971 to 1977 as a Member of Parliament, I served on the Consultative Committee relating to planning and also had one or two meetings with the Planning Commission as a Member of Parliament. Because I had thus got some experience of the working of the Commission, I could respond to the invitation of the editor to write something on the Planning Commission.

I must say that I enjoyed being a member of the Planning Commission, as it gave me a very comprehen-

*Eminent Economist.

tive education in regard to the various matters concerning the development of the Indian economy. I had quite a number of subjects to look after as Member which included two major subjects of Education and Agriculture, but also Labour, Employment, Social Welfare and Social Science Research. I took advantage of being a Member in charge of Social Science Research and set up a committee to consider the status of social sciences in the country, made myself its Chairman and recommended the setting up of the Indian Council of Social Science Research. Incidentally it fell to my lot as Minister for Education to launch this Council. Another pleasant experience I recall was the special seminar I convened on the problems of Scheduled Castes and Scheduled Tribes in which the participants included Shri Jagjivan Ram, then out of the Cabinet on account of the Kamaraj Plan, and Shri Sanjeevaiah who was then President of the Indian National Congress. This seminar made many concrete recommendations and I subsequently had the pleasure of conveying them personally to the then Prime Minister, Pandit Jawaharlal Nehru, and also drafted a letter for him for being sent to the Chief Ministers for implementing its recommendations.

I also enjoyed the many visits I paid to the different States in connection with my work and the meetings that I had with State Ministers and more importantly State officials. I then gathered the feeling which I still retain, that the State officials are more knowledgeable on matters relating to economic development as they have greater contact with grass-roots, than the Central officials who spend the bulk of their time sitting at their desks in New Delhi and perusing documents and taking decisions on paper.

One unpleasant experience I had in the Planning Commission was the devaluation of the rupee in 1966. The Planning Commission was blissfully unaware of the impending decision of Government. I believe the Deputy Chairman of the Planning Commission was fully in the know of what was happening and also some senior officials in the Commission. I did not like the decision of devaluation and thought at one time of resigning from the Commission, but did not do so as by that time I had decided to stand for election as member of the Congress party and did not want to embarass my party by taking such a step. Anyway, I must record here that when the Planning Commission was consulted on all sorts of matters, nothing would have been lost if its members had been consulted in confidence on the pros and cons of the subject before a decision so vitally affecting the size and shape of the Plan was taken by Government. In fact the decision of devaluation necessitated a complete redrafting of the Fourth Plan, the first draft of which had been completed by the Planning Commission.

I must also record with some sadness that though the Planning Commission of which I was a member spent a great deal of effort and energy in preparing the draft Fouth Plan, it proved to be still-born when the Planning Commission was re-constituted in 1967 with Prof. Gadgil as Deputy Chairman. It is a sad commentary on the way the Planning Commission works that the new Planning Commission did not make a single reference to the draft prepared by its predecessor and, if one read only the report of the Gadgil Planning Commission, one would think that there had been no draft Fourth Plan which had been prepared earlier.

Finally I must say I enjoyed working under Shri Gulzarilal Nanda. Somehow he created an atmosphere of complete freedom in the Commission and there was an espirit de corps amongst the members and a great deal of informality in our relations. I am afraid things were not the same when Shri Ashok Mehta became the Deputy Chairman, but he was always correct in his relations; and never interfered with members and gave them full freedom to function according to their own lines.

I was not sorry to leave the Planning Commission and I enjoyed in the hurly-burly of Lok Sabha elections, where, for the first time, I went out to the rural areas talking in my mother tongue to rural audiences, and asking for votes for my being returned to Parliament.

Over-Centralisation

I may perhaps conclude this brief article by referring to some of the lessons that I have drawn from the working of the Planning Commission which may perhaps be of some interest to the current Planning Commission and possibly also to its successors.

1. I think Planning Commission is far too much centralised in our country. The State Governments of course bring their plans to the Planning Commission and invariably their plans are cut as their projects for expenditure usually exceed the resources available to them either from their own sources or from Central assistance. I also had a feeling that the plans that the State Governments brought to the Planning Commission were not plans formulated with the study and effort that the Central Planning Commission put in when preparing the national Plan.

By and large, the State plans were the work of State departmental officials and the States had no effective planning boards of their own in spite of the many suggestions from the Central Government that they should constitute such Boards. Even when they did constitute such Boards, these Boards either never met or met infrequently and hardly played any role in the formulation of the State plans with one or two possible exceptions.

As far as the national Plan was concerned, the Planning Commission had discussions with the Central Ministries, and here also, the position was the same. Expectations always outran resources and the cuts had to be effected in the same manner with the Central Ministries' plans as with the State plans. The work the Planning Commission had, as far as planning was concerned, was thus to indulge in making cuts in State plans and in the plans the Central Ministries bring them to fit within the limit of the Planning Commission's projected and available estimate of resources, including additional mobilisation for the relevant Plan period. The bulk of the real planning element in the Planning Commission's work was really to draw up projections of income, output, demand, savings, etc., and these were in some loose fashion connected with the plans put up by the Central Ministries and the State Governments.

By and large, the link was financial rather than material, though material figures or targets always formed an important part of the Plan documents. This really brings me to the core of my criticism of the Commission that it is highly centralised. There is but little work done at the grass-roots and very

little touch with the needs, resources and constraints of the people at large, who, in the last analysis, constitute the factor that could make either for the success or failure of the planning. By and large, people's participation was more notional than actual. Nevertheless, the plans have succeeded in increasing the national output in various fields and I can certainly say with confidence that India's national agricultural and industrial output as also its infrastructure, both economic and social, would not have grown to the extent and in the manner in which it has grown during the last 30 years, but for the existence of planning and the work put in by the Planning Commission.

2. I think the Planning Commission perhaps would have worked better if it had been spared from the numerous and multiple detailed work which somehow came to be entrusted to it So many projects have to come before them for approval which could safely have been left to the Department or Ministries or the State Governments concerned. The Planning Commission should have spent more of its time on going into the analysis and coordination of basic fundamentals than into approving all sorts of small details and projects which practically made them a duplicate Finance Department.

Poor Monitoring

3. The important thing about planning is not merely to draw up plans. The more important thing is to see that the projects included in the plan are properly formulated and an appropriate machinery is brought into existence for ensuring their monitoring, evaluation and modification in the light of actual results. Unfortunately this was not done by the Planning Commission, though they had a Programme Evaluation Board and Programme Advisors with regional charges throughout the country, presumably functioning as watch-dogs of the Planning Commission to see the implementation of plan projects. Almost invariably, the final expenditure outran the original estimates on the basis of which the projects were approved which meant that to some extent these projects had been formulated without adequate preparation, and had been approved without sufficient scrutiny. Invariably also the time-span of projects was only rarely fulfilled. Gestation periods would prove to be much longer than was anticipated and all this of course had its obvious repercussions on the results emerging from the planning process.

If I could, at this old age, make a suggestion, I would suggest that the major work of the Planning Commission, after drawing up the basic fundamentals and Plan priorities and formulating the plan, should be the work of monitoring and evaluation of implementation and suggestions for modification in the light of actual results. It is also important that the Planning Commission should have a machinery to see that the projects coming before them are properly formulated both in terms of financial outlays and time schedules and also in terms of coordination in time and space of the different projects, which, taken together, constitute the process of planned development. I would also suggest that the Planning Commission should be freed from having to give its approval to all sorts of small and minor projects. I would also suggest the imperative necessity for the State Governments to have Planning Boards with functions and authority similar to that exercised by the Planning Commission at the Centre, and the planning process should be spread downward to the district and Taluka levels and carried out in a manner that would ensure attention to local needs, local resources, and local constraints and also evoke local participation.

Decentralisation, in my view, is the essence of successful planning in a vast continental country like India. Decentralisation should not mean just implementation at the lower levels but also formulation and participation at the lower levels and constant feed-back between different spatial units of the planning process.

Political Aspects

There has been a certain amount of controversy about the question whether the Planning Commission should include only experts who are non-political or also include Ministers, and whether it should have a non-official, non-political Chairman, or have the Prime Minister as its Chairman. In my view the existing formulation of the personnel of the Planning Commission is quite sound If the Planning Commission became a mere body of experts, their opinion would become only an academic exercise. If it is to carry any weight, they must have political backing, which can only come from the Prime Minister being its Chairman and the Finance Minister being one of its members. It is only then their dialogue with State Chief Ministers, State Ministers, etc. and the dialogues their officials carry on with Central and State officials would have weight, and have a real impact on the process of planned development.

Revive Panels

I would also suggest that for the better performance of their work, the Planning Commission should re-establish contact with experts from various fields, as Planning Commissions prior to Prof. Gadgil assuming the Deputy Chairmanship used to do. Before Prof. Gadgil became Deputy Chairman, the Commission had a large number of panels for dealing with various subjects which brought together experienced non-officials and eminent experts in the field and made it possible for them to have dialogue with the Planning Commission and influence their thinking and for the Planning Commission to test out their ideas on these experts. Unfortunately, for reasons which I have never been able to understand, this practice was given up by the Planning Commission when Prof. Gadgil became the Deputy Chairman, and subsequent Commissions have also followed the same example The result has been that the Planning Commission, though it is supposed to be an independent and largely non-official body, has lost complete touch with non-official opinion, and it is one of the reasons for its tending to become more like a government department than an independent Planning Commission of the type which existed in the past.

I think it is also good to have a Planning Ministry answerable in Parliament for the work of the Planning Commission.

I would conclude by saying that with all its defects, the Planning Commission has made a substantial difference in the process of economic development of the

country and the difference has been made in a positive and beneficial direction. In my view, therefore, the Planning Commission should continue as a semi-independent organisation with the authority behind it of the Central Government and also State Governments which are represented in the National Development Council. Only I think it should function less like bloated a Central Government Department, and more like a real planning body, which draws up plans in terms of priorities, balances and coordination for achieving a set series of objectives and only go in for a major translation of these into financial targets and physical projects and not go in for details or platitudes. The detailed work of planning and implementation should vest with the Central Ministries and the State Governments. The Planning Commission should not become an alibi for non-implementation either at the political or admistrative level. After having drawn up the plans, the major work of the Planning Commission should be to spend the rest of the planning period in exercising an objective and impartial overview of its implementation

I cannot conclude this article without a reference to the man who functioned as Chairman of the Planning Commission from its inception in 195C to his passing away in 1964. Jawaharlal Nehru was the real architect of planning in India and it was one of his major interests, along with secularism, India's role for world peace, and socialistic orientation for Indian society. As long as he lived, the Planning Commission was a most important factor in determining and evaluating the size, pace and contour of the country's economic development; and this was because of the close and continuous interest he took in its work. Subsequent Prime Ministers did not evince the same interest and the Planning Commission got lost in details and examination of hosts of minor projects, with corresponding increases in its staffing. In effect it became a super-department of Government instead of functioning on the lines conceived by its founder. With the vital economic challenges as also opportunities facing the country today, would it be too much to hope that the Planning Commission would be restored its original status and also function as it did when Jawarharlal Nehru was its Chairman. □

Key Issues in Planning for the Future

Tarlok Singh*

LIKE the political system and the national economy, for several years India's planning processes have been in a state of crisis. The achievements to the credit of planned development have by no means been small. With the advances made in the growth of scientific and technical resources and manpower, in the capacity to organise and deliver, and in general awareness of the nation's needs and possibilities, the means to root out the problems of poverty, hunger and under-nutrition, and unemployment and under-employment, and to assure the essential amenities and opportunities to the mass of the people, are now well within our grasp. The economic potential of the Indian economy and the capacity of political and administrative institutions can be drawn upon to a far greater degree than has yet been done. Economic self-reliance, first offered as a goal in the mid-fifties, and fulfilment of the Directive Principles of the Constitution, since translated into a succession of political symbols, have become fully feasible propositions, There are many imbalances to correct, and problems of the future will only yield to more fundamental and sustained policies than we have followed in the past. The main question to consider therefore is, given our present resources and potentials and the formidable challenges that face us, in what manner could the processes of planning be strengthened, so that the basic problems can find satisfactory solutions over the next fifteen to twenty years within the political parameters and assumptions of India's democratic, federal system.

There are several issues on which attention could be focused. Among these, we may pick five as being of far-reaching significance.

1. Implications of a national approach to planning;
2. Long-term planning;
3. Role of planning in resolving growing contradictions in the system of national economy and the social strucure;
4. Planning and regional and international cooperation in development;
5. Research, evaluation and synthesis in relation to planning.

National Approach to Planning

Planning has been thought of from the beginning as an effort by the nation as a whole, involving equally the well-being of all citizens, with greater emphasis on the needs of the weaker and the more vulnerable groups, and seeking the cooperation of all. Even under favourable political circumstances, such an approach asks for much understanding and restraint on the part of those within and outside governments. Upto the mid-sixties, on the whole, though never absent, short-range political considerations were not central to the planning process. Yet, on each of the three occasions when the continuity of planning has been abruptly broken (in 1967, 1977 and 1980) the reasons advanced have been unconvincing and some damage has been done. It is time once more to recall a passage from the Second Plan which, using a few of Jawarharlal Nehru's own words, had said:

"The beginning and the end of a Five Year Plan

*Eminent economist and former Member-Secretary of the Planning Process and Public Policy: A Reassessment". The on a part of the Kale Memorial Lecture, 1979 on "The Planning Process and Public Policy: A Reassessment". The Lecture was delivered at the Gokhale Institute of Politics and Economics, Pune, on 2 June 1979.

are vital dates in the nation's history. Each Five Year Plan is both an assessment of the past and a call for the future. It seeks to translate into practical action the aspirations and ideals of the millions in the country and gives to each of us the opportunity of service in the common cause of eliminating poverty and raising standards of living."

Six years later, when events across the northern borders were seen by some as making planning much less relevant to national survival, Jawaharlal Nehru had insisted that the Plan was "the warp and woof of our national life, and it was the war effort itself that requires the Plan".

Planning involves technical and administrative processes. But without its *elan*, without a commitment to continuity and sustained action, without securing support that goes beyond party and the emotional involvement of citizens, *qua* citizens, these processes may achieve investment decisions, but will not change society or bring new social and human values into the life of the community. Therefore, with experience of three decades behind us, by far the most decisive factor for the future of planning in India is the capacity of the national leadership from all parties to see beyond small loyalties and gains and to create, once again, the basis of a broad, national consensus in the approach to planning. This has become all the more essential because governments of different parties or coalitions of parties are bound to be in office at different points in the political system and must find, as much in national interest as for their own long-term survival, agreed and acceptable conventions to work together in the interest of the people as a whole. For, as was well said by Jawaharlal Nehru on one occasion "the party politics about which there is so much ado, involves, really speaking, only about 5 per cent problems. On the remaining 95 per cent there is no question of such a difference". If we have faith in democracy and in India, we must cherish the hope that the national leadership as a whole, within and outside politics, will succeed in counterig the undesirable trends which have already done much to turn planning from a national commitment into a political, administrative and technical tool which could be used for partisan rather than wholly national purposes. Here, scholars of all disciplines have a moral and intellectual duty to render to the nation.

Long-term Planning

From the beginning some long-term projections have appeared in the Five Year Plans. The First Plan offered a macro-economic view of the growth of the economy extending to a period of 27 years, the Second Plan upto 1970, and the Third Plan also upto 1975-76. With improvement in national accounts, the Fourth Plan presented a picture of growth in national accounting terms between 1968-69 and 1980-81. The Fifth Plan was drawn up against a perspective for the period ending 1985-86 which considered in detail demographic aspects, the objective of self-reliance, improved consumption for the bottom 30 per cent of the population, the structure of output and the structure of demand in terms of 66 sectors into which the economy was divided, and the consequent changes in the structure of gross national expenditure. The Draft for the Sixth Plan (1978-83) has recently carried these technical exercises to a more advanced level in terms of an input-output study based on 89 sectors of the economy. The perspective presented has been recently extended to 1992-93 and includes projections of sectoral rates of growth, demographic projections, and prospects for the reduction of poverty, defining the poverty line in terms of nutritional requirements of 2400 calories per person per day for rural areas and 2100 calories per person per day for urban areas.

Advances in availability of data and computing facilities over the past decade have enabled planners to begin to quantify magnitudes and propositions which earlier could be stated mainly in qualitative terms. The purpose of the elaborate exercises undertaken for the Fifth and the Sixth Plans was essentially to justify the Plan proposals in terms of projections for somewhat longer periods. This is not an adequate approach. We need now to develop long-term plans which are mainly operational in character and can be monitored in operational terms, while their consistency *inter se* can be examined and assured more precisely than in the past. For an economy like ours, it is necessary to have continually detailed perspectives, with periodical revisions, for the principal sectors, the principal regions, and the main socio-economic groups, for a period of at least 15 to 20 years. Plans with different time-horizons should be regarded as constituting a system. The functioning of long-term, medium-term and annual plans in the planning process arise from the significance for development of factors which bear specially on these time-spans.

Long-term plans for different sectors, different regions and for the economy as a whole should serve as a genuine framework for medium-term plans. Certainly, they should also meet all the relevant tests. However, their main focus should be, not merely on estimates and projections but, more specially, on methods of intensifying and accelerating development, on structural and institutional changes, on problems and policies affecting the mass of the people and the poorer and the less developed regions, on changes called for in the unorganised sectors of the economy, and on patterns of income, employment, skills and education, and levels of living. Going beyond aggregate numbers, we should be able to work through the long-term plans for specified and planned changes in the occupational structure of the population, in the organisation of agriculture, of small industries at different levels of scale and technology, of trade, and of the modern and organized sector, for changes in the income structure of rural and urban communities and in the consumption of different socio-economic groups, and for carefully conceived designs of growth for the development, individuality, of each region within the national economy. The planning of economic and social overheads like transport, power, irrigation, education, health and housing lends itself to effective long-term planning. The long-term plans in each field should highlight the nature of social, economic and technological choices to be made by the nation and should provide a basis for political and administrative commitment and allocations of resources as needed with no less determination than in the Five Year Plans. Without such plans and the commitments that go with

them, there is a real danger that Five Year Plans may become administrative and technical operations without sufficient moral force and commitment to continuity. Here, obviously, the main responsibility lies with the Central Government, the Planning Commission and the National Developmet Council.

Contradictions within the Economy and the Social Structure

For several years, there has been an increasing concern about certain critical contradictions in India's social and economic situation. These bear on the widening of disparities in income and wealth, the disproportionate growth of the larger business houses, and the relative worsening of the income and consumption levels of large sections of the rural and urban populations, notably, the landless, petty farmers, rural artisans and those engaged in traditional household industries, and unskilled workers generally. The reality is much too far removed from the declaration in the Third Plan, which also bore Nehru's personal testament, that every citizen of India must be assured "the right to work, to equal opportunity, and to a minimum level of living". The Plan had further stated :

> "In the last analysis, economic development is but a means to an end—the building up, through effort and sacrifice widely shared, of a society, without caste, class or privilege, which offers to every section of the community and to all parts of the country the fullest opportunity to grow and to contribute to the national well-being."

The expansion of the Indian economy under the impact of planned development has widened opportunities in unequal measure for different sections of the population. This would have happened even in a non-market economy which failed to take sufficient counter-measures. A mixed economy lends itself to a high degree to accentuation of economic and social disparities. At Independence, in the very manner of the transition to freedom, the mixed economy was part of the inheritance from the past and, even if the political will had been different (which it was not) there was no alternative to it. It seemed natural then to use the private sector as an agency for the development of modern industry. Within the private sector, those who possessed of experience and resources and otherwise advantageously placed—the large and larger business houses of today—were able to respond more successfully to the new opportunities. They did so, by and large, with the support of Government and political opinion.

While maintaining the premises of a mixed economy functioning through markets, in addition to socialist orientations, extensive measures have been taken to create a more balanced institutional framework for the modern sector of the economy. These include expansion of the public sector in industry, near monopoly of Government in several branches of industry and in transport and power, nationalisation of the principal commercial banks and state control over the bulk of investible resources, legislation on monopolies and restrictive trading practices, changes in the system of industrial licensing and enforcement of new priorities in the distribution of credit and other public support. Yet, much informed opinion is genuinely disturbed by trends making for greater concentration and for enlargement of disparities in income and wealth and in consumption.

Aided by all the available data and research and capacity for thought and analysis which exist in the country, it is now a prime obligation of planners to place the policy options before the country in a reasoned and responsible manner from the point of view of the best long range interests of the country. In a democracy, the issues which require consideration at the present time can be resolved only through serious and informed study, for whatever the economic system we wish to create for the future, transitions have to be provided for, the apparatus of production has to be maintained, and growth and development must continue. Purposeful and precise social and institutional planning, going far beyond investment decisions and declarations of political intent, is a necessary condition for wise, well-conceived and firm judgements by Parliament and the State Legislatures and by Governments at the national and State levels on major issues of policy which bear on the future system of national economy.

However influential now and in the future, the modern sector remains still a small part of the national economy. The crux of the problems of social change, of stratification and inequality, of low productivity and lack of work, lies within the rural situation. No one would wish to question the impressive gains in agriculture and in rural development in may parts of the country. However, one of our main failures in developments has been that we have not had an approach and a strategy which could become a national commitment for transforming our rural society into a just and progressive system of social and economic relationships which could truly hold the prospect of equality and growth of opportunity for the weaker and the deprived groups—the landless, the petty and marginal farmers, the rural artisans and for numerous groups engaged in traditionally poor occupations. We have looked for easy ways of bringing about far-reaching structural changes, relying mainly upon investment and credit and supplies on more favourable terms and the principles of capitalist and individual enterprise in all spheres of activity. The co-operative movement has grown in the spheres of credit and services, but has virtually faded away as an instrument of fundamental structural change.

Despite the greater emphasis given in recent Plans and currently to the poorer groups, we should have no reason to be surprised if the new economic opportunities which an expanding economy and a growing network of public services and credit throw up are distributed highly unequally within the community. There is no reason to suppose that the trends over the next few years will be any different. Even if the land reform legislation which was enacted had been implemented with honesty (which it has not been), our rural structure would still be highly unequal, with large numbers continually at the very margins of subsistence and with little hope for most of more than superficial improvement. As conceived in the Second and Third Plans, agrarian reform was to be only the

rst phase of rural change. Its purpose was to prepare te way for more radical changes, the essence of which was and must be the adoption, progressively, of community approaches to the use and development of land and other resources, community concern and responsibility for bringing all sections of the population to a level of genuine and economic equality, and the growth of a composite rural-industrial economy, with the necessary complement of economic and social services, in every single region in the country. After the Third Plan, both in politics and in planning, the search for a just rural society was practically given up, as if technological changes no longer needed the support of social, structural and institutional changes and of new values and mores of functioning in society. Only a new movement in social and economic thinking, which must embrace and find strength both within and outside politics, can hope to bring national policies back, once again, to fundamental issues in the economic and social transformation of rural India.

There is a third major aspect of the contradictions which it must become a responsibility of planners and social and other scientists to resolve. A wide chasm divides the modern, organised sector, which will inevitably continue to grow, from the unorganised parts of the economy, including agriculture, much of small and household industry, construction, trade, and many other dispersed activities. Through the financial and credit system and government intervention, in some aspects new linkages are being developed, but the gulf remains large and is likely to increase still further because of pressure of population and other factors. The major responsibility for resolving the problems of mass poverty, of finding work, of utilizing manpower resources at rising levels of productivity, of assuring their minimum needs to all, and of creating conditions of equal status and opportunity at the base of society, has to be undertaken within the unorganised sectors of the economy. Each of these has to be reorganised purposefully so that small units, functioning separately in some ways and collectively in others, are able to enter the stream of modernisation effectively, draw fully upon the potential of the organised parts of the economy, and become, on their own terms, as capable of generating surplus and achieving economic growth and expansion as other more favoured parts of the economy.

In the coming years, planning should postulate an explicit national and all-embracing strategy for greatly diminishing the structural dualism which exists and will persist within the Indian economy. The strategy has its most far-reaching applications in the reorganisation of the production system in agriculture. Here, the changes will come in stages over a period but a clear sense of direction and design of change must become an integral part of the outlook on planning. The planned reconstruction of the unorganised segments of the national economy so as to bring about a unified and integrated economic structure all parts of which are rising simultaneously in productivity, is perhaps the single most important task, equally for planners and for scientists and technologists as well as economists and other social scientists.

Regional and International Co-operation

In common with other countries, India's planning has been largely inward-looking. Through development over the years, the country now possesses resources in manpower, science and technology, experiences and organisation, and potentials for growth, which enable the Indian economy to extend itself to its own advantage and, even more, to the advantage of other less developed countries, specially those in its neighbourhood, in South Asia and in West Asia. The implications of the flow of remittances from Indian workers and technicians and others who have gone abroad and of the growing opportunities for Indian consultancy and other services and the so-called "joint ventures" have yet to be absorbed within the scheme of national planning.

There is an even more fundamental reason for urgently broadening the horizons of India's planning. India, Pakistan, Bangladesh, Nepal, Bhutan and Afghanistan represent the largest single concentration of mass poverty in the world, poverty which we now have the means to eradicate. Among other neighbours, Maldives face serious problems of under-development, Burma is a country rich in natural resources still awaiting intensive development and Iran has great wealth in oil and other resources ready to be put to constructive uses. All these countries have much to give to one another and could cooperate in many areas of development with considerable mutual advantage, with costs and benefits assessed carefully and objectively for all concerned. In the process, their natural resources could be developed more rapidly and more fully, each of the economies and specially those which are weak and excessively dependent on agriculture could develop modern industrial structures in harmony with their resources and potentials, and with wider markets becoming readily available to them.

Cooperation among less developed countries is now a running theme in international forums, in conferences of the 'group of 77' and in non-aligned and Commonwealth gatherings, but too little is done to give concrete meaning to the declarations which are being made. Such cooperation is itself an indispensable condition for evolving a new international order and restructuring relations between the more and the less developed world. For India to take its due share in these movements and possibilities of international reconstruction, her own planning must now reflect a much wider spatial perspective, a longer time-horizon, and a sustained concern for the well-being of the people of the neighbouring countries equally with her own This is a responsibility India owes to herself no less than to others.

Research, Evaluation and Synthesis

Since the early days of planning, considerable support has been given to social, economic and scientific research, and evaluations have become part of the system of planning and administration. As development proceeds, there must be still greater stimulus to such research and evaluation, and inter-disciplinary approaches could play a much larger role than they have done so far. At the same time, there

is need to consider afresh the adequacy of our present methods of shifting the lessons of experience examining critically the available research and evaluation studies in terms of the country's basic problems, and attempting new hypotheses from time to time. At the present time, one cannot help feeling that, whatever be the reasons, as a nation, we continue to fail to utilise the available knowledge and experience to the maximum advantage. Half-truths and shiboleths which are often exceedingly dubious in character are allowed to pass unqueried, often out of false modesty or respect for authority. In time, they find their due place in official declarations and even in Plan documents.

Here, then, is an obligation which institutions of learning and scholars working individually and in groups, have a duty to discharge. They may well differ much from one another in views and interpretation but, when disinterested and committed to the search for truth and willing to learn from life, they have a bond that gives them unity and coherence. Through generous but unmotivated support to their work, public policy and planning can only gain. To summarise knowledge and experience from time to time in each important area, to draw out their meaning for the future, and to develop new thought and syntheses, could become a truly creative means of enriching national policy and deepening the planning process. □

Indian Agriculture: Tasks for the Eighties

Dr. M. S. Swaminathan*

Use of tractor for agricultural operations

DURING the 60's and 70's the major goal of agricultural research and development was to assist the country in riddding itself of its dependence on food imports. We had to get away in the seventies from the "ship to mouth" existence through which we had to go through in the 60's. Fortunately due to a series of steps in technology development, organisation of relevant services and, above all, appropriate public police support in pricing and marketing, it has been possible to achieve a measure of self-relience in foodgrain supply at current levels of purchasing power. Through complementary programmes such as 'Food for Work' and 'Food for Nutrition', the first steps have been taken to achieve the freedom from hunger goal proposed by India and other countries at the World Food Conference of 1974, viz., that by 1984 no one should go to bed hungry. Progress has been achieved in improving production not only in wheat and rice but in several other crops, such as potato, cotton, apple, etc. The National Food Security System is slowly taking shape. Consequently, the country could face one of the worst droughts of this century during 1979 without food imports. The question hence arises as to what should be our major goals in the agricultural sector during the 80's. The programmes to be introduced during 1980-85 will naturally depend upon an answer to this question.

*Member Agriculture and Rulral Development, Planning Commission

In my view, the only immediately feasible method of achieveing the triple goals of more food, jobs and income in the rural sector is accelerated agricultural and rural development. *I would include in agricultural development, all measures which are designed to improve production, conservation, consumption and trade (both internal ad external).* Such a balanced growth of agriculture would alone help to ensure that hunger does not prevail in the midst of abundant food availability. Also, there could be a greater flow of financial resources to the rural sector only by increasing trade in farm goods as well as in agro-based and allied industrial products. By organising such trade on producer-oriented lines, we can ensure that the profits of production go to farmers and the rural population

Internationally it is widely agreed that one commodity which will be in the greatest demand by the end of this decade is foodgrain. People can go to some extent without oil but not without food. It is hence likely that by the end of this decade an equilibrium may develop between the price of a barrel of oil and a bushel of grain. Calculations by the Planning Commission show that even with a 7 per cent growth rate in industry, over 75 per cent of the work force will have to be employed in the farm sector as well as in the unorganised non-farm sector. Also, several studies have indicated that agriculture exercises a reasonably strong independent influence on the growth of industry The impact of agricultural performance is felt both on the output of consumption goods industries and on

the output of basic and capital - goods industries. *Therefore, in the 80's the major aim of our agricultural strategy should be the development of our agricultural strength in such a manner that we are able to ensure freedom from hunger to our own people and to enter in the international grain and agricultural trade in a substantial manner.* Concurrently, steps should be taken to do away with the necessity for importing edible oil. It is only by becoming an important agricultural country in the sense of commerce and trade that we can hope to solve the numerous problems of rural unemployment and under-employment. Also, this is the only way by which our economic and consequently political independence can be maintained. If we do not give an orientation to farming which will provide to small and marginal farmers and share croppers assured and remunerative marketing opportunities, there will be stagnation in productivity and the desired minimum growth rate of 4 per cent will not be achieved. We may then have to import food to feed our fast-growing population.

Unloading of wheat from the harvesting machine at the State Agricultural Farm, Suratgarh

The Pathway

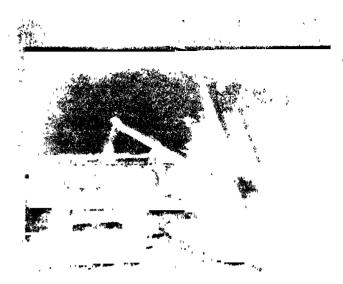
The pathway of agricultural advance we have so far chosen has relied predominantly on individual initiative supported by Government assistance in the supply of inputs, credit and marketing. *The average size of a farm holding, however, is tending to get smaller and smaller. The productivity levels of most of our farming systems are low and consequently the cost of production is high.* The return from the investment on irrigation is inadequate and in several areas such as the Tawa Command Area, water is being viewed as a 'curse' by many farmers than the 'blessing' it was intended to be. *The lack of a systems approach in planning and programme implementation has created numerous problems, including a mismatch between production and post-harvest technologies.* Even a small increase or decrease in production hence leads to either an acute scarcity or an uncomfortable glut. This is particularly evident in perishable commodities like onion and potato. *The more easy pathway of agricultural advance we have so far taken will not help us to achieve the goal of becoming a commercially important agricultural country.* We need, therefore, to look at the problems facing our agriculture critically in the light of past experience and current and future needs *Unless we can maximise the opportunities for intensive agriculture which a small farm provides and minimise the handicaps from which a small farmer suffers, we will not be able to capitalise on our agricultural assets.* In this context, it is desirable to review the current definition of small and marginal farmers and develop a single term for all farmers who are either economically or ecologically handicapped. Programmes for them should cover the entire country and not merely a proportion of blocks, Only in this way, our vast human resource can participate fully in development. I would now like to refer to some of the major components of agricultural programmes.

Agricultural Research

The following are some of the immediate tasks :—

1 *Basic Research* :

(a) *Raising the ceiling to experimental yield* :

1. Development of genetypes of crops, farm animals and inland and marine fisheries.
2. Development of *high yield-cum-high stability systems of production* in all major crops, farm animal and inland and marine fisheries.
3. Maximisation of benefits from units of soil, water, air space and sunlight.

(b) *Bio-energetics* :

1. Efficiency of conversion of different forms of 'cultural' energy into food energy.
2. Total biomass production per unit of time, solar energy and cultural energy and partitioning of the biomass into economically beneficial pathways.

2. *Applied Research* :

(a) *Ecology of cultivation* :.

1. 'Soil breeding' and soil health care involving suitable blends of ameliorative measures for improving productivity in marginal soils and low-yield environments.
2. Environmental impact studies of production and processing systems both in agriculture and aquaculture.

(b) *Energy Management* :

Improved fertilizer and water use efficiency including the development of neem or NR-coated urea and other fertilizers suitable for high rainfall conditions; introduction of decentralised, small, total energy packages for agricultural and other rural applications.

(c) *Economics* :

Diversified and assured income in major farming systems through mixed farming and 'minimum yield guarantee' programmes ; studies on costs, returns and risks.

(d) *Employment* :

Relevant mechanisation based on the dynamics of labour availability and costs and the development of labour intensive, high value techno-

logy on the lines of hybrid cotton methodology.

3. *Adaptive Research* :

(a) *Size-neutrality of technology* :

Experiments designed to demonstrate that the technology is size neutral with regard to the size of a farm holding and the risk-taking capacity of farmers.

(b) *Identification of the constraints causing the gap between potential and actual farm yields even at current levels of technology* :

Inter-disciplinary constraints analysis under different conditions of farm holdings and management to identify the precise set of factors (e.g. ecological, technological, socio-economic and institutional) responsible for the prevailing gap between potential and actual farm yields under small farmer conditions and getting this data fed into the field extension programmes ; priority in such studies may be given to eastern India, where the untapped production reservoir is very high (i.e., in Bihar, Orissa, West Bengal, Assam, North-Eastern Region and Eastern Uttar Pradesh and Madhya Pradesh).

4. *Extension Education* :

Enlarge the net-work of Krishi Vigyan Kendras and operational research projects and organise National Communication and Training Centres in pulses and oilseed crops and in post-harvest technology on the lines of the National Communication and Training Centre in Rice at Hyderabad. The "Lab to Land" programme should be made an effective instrument of rapid technology transfer.

To sum up, the three arms of the research strategy should aim at :

(a) reducing the gap between potential and actual *experimental yields* through relevant basic and applied research in all major farming systems ;

(b) reducing the gap between potential and actual *farm yields* through appropriate packages of technology, services and public policies; and

(c) efficient energy and input management and ensuring the renewable nature of agricultural wealth through appropriate steps in ecological security.

Most of the above-mentioned studies will involve inter-disciplinary and in some instances (e.g. small farmers' problems) inter-organisational 'symphonies' and hence their success will depend upon the 'genes for cooperation prevailing in the members of the scientific teams.

The research programmes of ICAR and Agricultural Universities during the Sixth Plan period should aim at consolidation, coordination and selectivity. Among the high priority areas for selective research will be the improvement of the yield potential of pulses, oilseeds and sugarcane and of dry farming areas. Similarly, forestry research needs greater attention with particular reference to energy plantations and industrial raw material. There is need for an All-India Co-ordinated Research Project for developing technologies which can help landless labour families to derive supplementary income from animal husbandry, fisheries and agro-industries.

Agricultural Development

In the area of development, more attention will have to be paid *to the organisation of relevant area-based service which will enable all farmers irrespective of the size of their holding and their innate input mobilising potential and risk taking capacity to derive full economic benefit from new technology.* The agro-service centres operated by self-employed rural youth will have to be revived and made effective. Brain-brawn-bank integration can be achieved by bringing together on-going efforts in Agro-Service Centres, T.V. extension system, Rural Godowns, TRYSEM, district credit plan, etc. An area approach to water management, pest control and post-harvest technology will have to be fostered. *This would require as much attention to institutional arrangements for promoting group endeavour as to making arrangements for giving subsidy and other assistance to individual farmers.*

Along with steps for more efficient water, energy and nutrient management, pest cotrol and post-harvest technology, it is essential that the efficiency of coordinated knowledge transfer and input supply systems is enhanced. The T & V system will have to be closely integrated with input supply arrangements. Particular stress should be laid on *farm management* and for this purpose extension services need considerable strengthening.

Input production : Water, seed, fertilizer, energy and appropriate farm machinery are some of the principal inputs in scientific farming. Investment in all these sectors should be of an order which would help us to achieve the desired output levels. The National Water Plan currently under development will include the following 3 major components :—

(a) tapping our full surface and ground water potential of a gross irrigated area of about 113.0 million hectares by 2000 A.D. (58.5 million hectares from major and medium schemes, 15.2 m. hectares from minor surface water schemes and 39.4 million hectares from ground water schemes).

(b) brining another 30 million hectares under irrigation through inter-basin and inter-State transfer of river water within our political control by 2000 A.D. and making a beginning immediately with Peninsular Rivers' development.

(c) stepping up R & D efforts in solar desalination of sea water with a view to providing additional irrigation to the ran-shadow areas along the coast.

We should push ahead in a dynamic manner both with steps for implementating the National Water Plan and for deriving maximum production from the already created water resources through better on-farm management of water. Eastern India, particularly Assam, North-Eastern Region, West Bengal, Orissa, Bihar and Eastern U.P., will have to receive the maximum attention in ground water utilisation. In rainfed

areas, community water harvesting, life-saving irrigation and more efficient delivery systems like drip irrigation will have to be promoted in a big way. Anticipatory research on scientific water use should be carried out in new irrigation project areas so that problems such as those experienced in Chambal and Tawa Command areas do not recur.

Credit : As we gradually reduce|eliminate subsidies, the timely and adequate availability of credit becomes vital for ensuring the size-neutrality of economic benefits from new technology; credit planning, distribution and recovery hence needs detailed attention. Effective credit insurance systems should also be developed for safeguarding farmers from ruin due to reasons beyond their control.

Nutrients : The fertilizer production capacity will have to be tailored to the desired level of farm output In addition to chemical fertilizers, a massive drive for harnessing of organic and biological sources of nitrogen will have to be launched. Phosphorous management and re-cycling will have to receive particular attention since phosphorous is a non-renewable resource.

Seed : The seed production chain should be strengthened and the production of seeds of improved varieties of pulses and oilseeds as well as disease-free planting material of sugarcane and horticultural crops should be vastly expanded.

Land Use Planning : More rational and scientific land-use practice based on considerations of ecology, energy, economics and employment will have to be promoted. The recommendations of the National Flood Commission will have to be implemented. In all hill areas, the major aim should be to promote land use patterns which are ecologically sound and which at the same time involve the cultivation of low volume| weight-cum-high value crops. Agro-forestry and horticulture will have to receive more attention, particularly in the form of integrated production-processing-marketing system.

Post-harvest Conservation : This is an area where on-going programmes such as 'Save Grain', Rodent Control, 'Rural Godowns' etc, will have to be developed into an integrated programme of drying, processing, storage, transport and marketing. An integrated post-harvest technology programme which will match the production efforts in both the quantitative and qualitative dimensions will have to be formulated. The various links in the producer-consumer chain will have to be strengthened according to the conditions prevailing in each area Arresting the spoilage of perishable commodities will have to be accorded priority attention. Design of economically viable transport systems is essential, particularly in N.E. India.

Horticulture and Plantation Crops : The Sixth Plan should be given a horticultural and plantation crop orientation in arid, semi-arid and hill-areas. Fruit trees, vegetables, flowers and plantation crops can help to improve rural incomes.

Trade : This is an area where a considerable step-up of on-going efforts is called for. Producer-oriented trade and consumer-oriented marketing will have to be developed in a mutually reinforcing manner. The opportunities for external trade should be continuously monitored and steps taken to improve the transport arrangements. Suitable steps will have to be taken to install the requisite handling facilities at ports for loading agricultural commodities for export purposes Stability of supply, quality of produce and cost-comparativeness will determine our ability to enter the international agricultural trade in a big way.

Forestry : The role of forestry in meeting our timber, fuel, fodder and industrial needs can hardly be over-emphasized. This is an area where there is need for more efforts in stimulating people's involvement. The restoration of the Himalayan and mountain eco-systems will need urgent attention. There is need for an Intensive Forestry District Programme.

Fisheries : Organisation of a National Fisheries Survey and the promotion of relevant technology of production, processing and marketing both with reference to inland fisheries and marine fisheries will have to be attended to immediately. Thriving coastal communities of small fishermen and landless labour families based upon an integrated sea farming approach (i.e. an appropriate blend of culture and capture fisheries) and the cultivation of casuarina, cashewnut and coconut along the coast will have to be promoted. Public policy issues relating to E.E.Z. utilisation should be settled without further delay, since with the 200 mile exclusive economic zone, the sea surface available to India for use is about 60 per cent of the soil surface in the country.

Animal Husbandry : The recommendations of N.C.A. in the animal husbandry sector need to be implemented without further delay Animal husbandry programmes in dry farming areas and in hill areas need special attention. Integrated systems of genetic improvement, better health care, improved nutrition and producer-oriented marketing will have to be promoted in all the blocks in the country. The special farm animals of the North-Eastern region like the yak and mithun need urgent attention if they are to be saved from extinction. The energy requirements for fodder and feed production will have to be met largely by integrating organic recycling and agro-forestry programmes with animal production programmes.

International Trade : Our entire capacity of monitoring international trends in agricultural trade will have to be greatly improved. Ad-hoc arrangements in the export and import of agricultural commodities should give way to well-planned and nationally relevant thrusts.

Insurance : Crop, animal and fisheries insurance systems will have to be improved and dovetailed with risk-minimising technology.

Agro-meteorology and Contingency Plans : There is need for stabilising food production through the introduction of aprpopriate contingency plans based on different weather probabilities. Contingency land and water use planning in drought and flood-prone areas and the building up of sufficient seed and fertilizer reserves will have to become a part of the regular planning process. Agrometeorology and climate impact studies need greater

support. Crop-Weather-Watch groups will have to be developed at the district level for providing early warning and timely action services. *Diara* (riverine) lands need particular attention in view of their great production potential in the flood free season.

Agricultural Statistics : The present position in crop production estimates is far from satisfactory. We need to enhance our capability in this area very considerably. We cannot take decisions of importance to the lives of about 17% of the human race based on 'impressions' and 'guesses'. The entire area of yield and production estimates in crops, farm animals, fisheries and forestry will have to be carefully reviewed and steps taken to ensure the availability of reliable and timely data. The Agricultural Census operations need whole time guidance and supervision.

Remedying regional imbalances : The Agricultural Plan for 1980-85 should mark the beginning of a dynamic programme of improving the production and productivity of

(a) neglected and agriculturally backward areas,

(b) rainfed areas,

(c) crops of national importance such as pulses, oilseeds, sugarcane, horticultural crops, etc in addition to cereals and millets, and

(d) systems approach to farming, involving crop-Livestock integration and combined agriculture-aquaculture, agriculture-syslviculture and other combined land and water management systems.

Since all this has to be achieved through small farmers and fishermen, our aim should be to assist farmers and fishermen in all the blocks of the country and not restrict programmes tailored to the need of specific target groups only in some selected blocks.

International Cooperation

More detailed thought needs to be given to (a) Technical co-operation among Developing Countries ; (b) Filling critical gaps in our internal competence ; and (c) Project formulation and monitoring for bilateral and multi-lateral assistance.

National Food Security

All the following major components of the National Food Security System should receive integrated attention :

(a) Ecological security designed to protect the basic assets of agriculture ;

(b) Technological security designed to introduce high yield-low risk production techniques in all major farming systems and supporting production efforts with appropriate post-harvest technology ;

(c) Building up grain reserves ;

(d) Social security measures like the National Rural Employment Programme designed to acclerate economic growth ; and

(e) Nutrition education and promotion including the supply of safe drinking water.

To sum up, we are entering a more difficult and hence more challenging phase of our agricultural evolution. Success hereafter will depend upon our ability to increase the *average yields of a farming system* by reducing the gap between potential and actual yields in the fields of small and marginal farmers and in dry farming and neglected areas. This, in turn, will call for greater efforts in fostering community endeavour in many areas of farm management. Also, all links in the production-cosumption-trade chain will need integrated attention. Contingency planning and disaster preparedness should become integral parts of the planning process. Non-monetary inputs will have to receive as much attention as cash inputs. We can then derive greater benefit from our vast agricultural assets and minimise our agricultural liabilities.

New Technique of Ammonia Production

THE Nangal Unit of the National Fertilizers Limited have developed a new technique of producing ammonia without the Waste Heat Boiler a vital equipment, which had to be sent to the manufacturer's shop in Germany for urgent repairs. This technique has been helpful in running the factory at 80 per cent of its ammonia capacity which otherwise would have remained inoperative for few months till the installation of the repaired Boiler.

With the removal of the Boiler, the total ammonia production had to come down to only 120 tonnes of ammonia per day against the total requirement of 900 tonnes.

To overcome the problem and to maintain the fertilizer supply a modified system is developed in which the gas coming out of the Synthesis Converter is quenched by the cold synthesis gas coming from the Synthesis Gas Commpressor. The water from the Water Pre-heater is flashed to produce steam.

The developments made in such vital industries as steel, petroleum, non-Ferrous metals, fertilisers etc. taken up in the public sector have also led to a march towards achieving the gal of self-reliance.

Thirty Years of Industrial Development

Mohd. Fazal

AT the beginning of the First Five Year Plan i.e 1950-51, the Indian economic scene presented a typical characteristic picture of stagnant economy. With the exception of a few agriculture-based industries like cotton and jute textiles and sugar, modern industry virtually did not exist. The heavy industries were practically non-existent barring a small capacity that had been established for steel, aluminium and some engineering industries. For almost all industrial products the country was dependent on imports. The imports of even consumer goods were very large. Even items like sewing needle, rubber shoes, etc., were imported. The basic infrastructure required for development of industries was non-existent. Installed capacity of electricity was as low as 2.5 million k.w. Long term institutional finance was unknown.

Member, Planning Commission

Recognising the need to speed up industrialisation, an Industrial Policy Resolution was adopted by the Government in 1948. This envisaged a mixed economy with an overall responsibility of the Government for planned development of industries and their regulation in the national interest. After the enactment of the Constitution of India in 1950 guaranteeing certain Fundamental Rights and enunciating Directive Principles of State Policy as well as the acceptance of socialist pattern of society by the Parliament as the objective of social and economic policy, a fresh statement of Industrial Policy was made in 1956.

This Resolution which has governed the pattern of growth of industrial development since then not only gives the directions for achieving rapid industrial growth keeping in view the socio-economic objectives, but also demarcates the areas for industrial expansion in the public and private sectors. Recognising the need to speed up industrialisation and, in particular,

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to develop heavy industries and machine building capacity, on the one hand, and prevention of concentration of economic power and private monopolies, on the other, the resolution provides that "the state will progressively assume a predominant and direct responsibility for setting up new industrial undertakings in addition to the expansion of infrastructure facilities like transport". The resolution provides that all industries of basic and strategic importance or in the nature of public utility services should be in the public sector. Other industries which are essential and require investment on a scale which only the state could provide have also to be in the public sector. At the same time, as an agency for planned national development, in the context of the country's expanding economy, the private sector will have the opportunity to develop and expand. The other objectives envisaged in the resolution are the promotion of cottage, village and small industries and balanced regional development of the country.

In order to regulate industrial development and canalise investment in the desired directions, Industries (Development and Regulation) Act was enacted in 1951. Under the Act, a licence is required for establishment of a new industrial undertaking, substantial expansion of an existing undertaking or manufacture of a new article by it as also for changing the location of an undertaking, etc. The Act applies to all industries listed in the schedule given in the Act. Industrial licensing system was introduced, and, as provided in the Act, a Central Advisory Council of Industries was set up along with development councils for a number of industries.

Taking a retrospective view of the developments during the last 30 years of planning era it is noted that there has been tremendous growth in industrial production during this period. India has become now the tenth industrially developed country in the world. However, along with the years of spectacular growth there have also been periods of difficulties and of industrial stagnation. Industrial production during the first decade (1951—1961) increased on an average by 7 per cent per annum. The increase during the next four years, i.e., from 1961-62 to 1964-65, was around 9 per cent per annum. Thereafter there was a period of decline and stagnation with the industrial production coming down to 5.3 per cent in 1965-66 and virtual stagnancy during the next two years. These were extremely difficult years for the economy with severe droughts and other problems. Industrial production showed a sharp recovery in 1969-70 by showing a growth of 7.4 per cent. During the next 5 years the growth rate hovered around 3-4 per cent. A significant improvement took place in 1976-77 when industrial production increased by 9.5 per cent. This was, however, again followed by a decline and the growth rate was only 3 9 per cent in 1977-78. Industrial production picked up again in 1978-79 showing an increase of 7.6 per cent. The year 1979-80, however, marks a water shed when the rate of growth

Production in Key Industries

Industry	Unit	1950-51	1960-61	1970-71	1979-80
1. Saleable steel	M T.	1.04	2 39	4.48	7.38
2. Alloy & Special steels	'000T	13.00	96.00	207.00*	520.00
3. Coal	M T.	32 80	55.67	72.95	103.96
4. Iron Ore	,,	3.00	11.00	32.5	39.55
5. Crude Oil	,,	0.3	0.4	6 8	11.77@
6. Petroleum products	,,	0.2	5.8	17.1	25.83@
7. Copper	,,	7.1	8.5	9.3	22.5
8. Aluminium	'000T	4.0	18.3	166.8	191.9
9. Zinc	,,	Nil.	Nil.	21.2	52.7
10. Machine Tools	Rs. crores	0.34	7.0	43.0	163.0
11. Cotton Textile machinery	,,	Nil.	10.4	30.3	207.0
12. Sugar machinery	,,	Nil.	4 4	13.9	31.6
13. Cement machinery	,,	Nil.	0.6	4.2	25.3
14. Paper & Pulp machinery	,,	Nil.	Nil.	3.5	32.1
15. Commercial vehicles	'000 Nos	8.6	28.4	41.2	57.4
16. Motor Cycles and Scooters	,,	Nil.	19.4	97.0	334.7
17. Bicycles	,,	99.0	1071.0	2042.0	3836.9
18. Agricultural tractors	,,	Nil.	Nil.	19.3	62.4
19. Cement	M.T.	2.7	8.0	14.4	17.6
20. Paper & paper board	'000 T	116.0	350.0	755.0	1100.0
21. Nitrogenous fertilizers	,,	9.0	98.0	830.0	2230.0
22. Phosphatic fertilizers	,,	9.0	52.0	229.0	760.0

*1971-72 Production.
@Provisional.

Steam and electric locomotive at Chittranjan

showed a sharp decline. According to the provisional figures available the growth in 1979-80 is lower by 1.5 per cent over the previous year.

It would thus be seen that even though there have been ups and downs, the achievement even in terms of growth rate cannot be said to be insignificant. With the rapid strides that have been made during this period, India ranks today amongst the most important industrial nations. Indigenous capability has been built up to the point, where except for certain raw materials such as pertoleum, sulphur, rock phosphate and certain non-ferrous metals where natural endowment in India is limited, there are very few areas in which imports are necessary for sustaining the growth of the economy On the other hand, engineering goods have become the largest component of our exports and the share of other non-traditional manufactured commodities in exports is growing.

An important part of the strategy of industrial development adopted in this country has been the importance given to strengthening the industrial base and establishment of capacities for basic and heavy industries. An idea of the progress made in the country in this direction can be had from the table containing production figures of such industries in 1950-51 and that in 1979-80 along with the achievement in the mid years.

Apart from the quantum of production and the direction of growth leading to the establishment of a diversified industrial structure conducive to further industrial growth, significant achievements have been made in other directions. The notable achievement is that advances have been made in breaking the barriers of tradition, and bringing a large section of people into the stream of the developmental process. The most heartening feature in this regard is the success achieved in conducting the traditional farmer to the use of modern methods of cultivation. The success of the green revolution is partly attributable to the growth of the industrial sector. There has been phenomenal growth in the development of small-scale industries, largely owned by middle class entrepreneurs. Industrial management instead of being family-oriented is getting professionalised. Sophisticated technology in a variety of fields has been acquired and absorbed. Industrial research and consultancy services have considerably expanded. With the establishment of adequate capacities in the heavy machine building sector, these industries are now being exposed to international competition so as to bring about greater quality and cost consciousness. The policy of identification of backward districts, the coordinated approach at the Centre, the State and local levels, and the introduction of backward districts, the coordinated approach at the Centre, the State and local levels, and the introduction of specific schemes for the development of the identified areas has resulted in promoting industrial development in the backward areas.

Another important characteristic of industrial development during the last three decades is the dominant part played by the public sector, and the recognition of its pace-setting role. The total investment in the central public sector as on 1st April, 1979 amounted to Rs 15,602 crores as against a mere Rs. 29 crores at the commencement of the First Five Year Plan on 1-4-1951. The share of public sector in the net

Sindhri Fertilisers Factory

domestic product in organised industry and mining has increased from 8 per cent in 1960-61 to 30.8 per cent in 1976-77. The public sector has entered complex technological areas in which private sector was not forthcoming. The developments made in such vital industries as steel, petroleum, non-ferrous metals, fertilizers, petro-chemicals, etc., taken up in the public sector have also led to a march towards achieving the goal of self-reliance which is an important objective of planned development.

Our motherland is endowed with considerable natural resources. The talent of men and women of India can be a match to some of the best in the world. The country has now very large reservoir of highly trained technicians, supervisors, foremen, managers, economists, social scientists, etc. The country has a strong democratic poltical system. All these factors have the potential to make India a great society. In this common endeavour, a great deal of motivation at all levels would need to be generated, and the nation has to march forward with a sense of enterprise and adventure to achieve the goal. □

Planning and Social Justice

Balraj Mehta*

IF the first five year plan of development launched early in the fifties was essentially designed to overcome the ravages of the Second World War and the political Partition of the Indian sub-continent, the second and the third five year Plans initiated a bold process of industrialisation, modernisation and growth of the economy. By the time the Fourth Plan was formulated, after the disappointing pause in the development effort and a three-year Plan holiday, a strong sentiment in favour of re-orienting the planning process to ensure social justice as part of the design for growth had gained ascendancy. This was a most desirable sentiment and if translated into meaningful planning and purposeful implementation of the plans, it would have proved highly rewarding. But the political response to the challenging tasks which were posed turned out to be sterile in practice. Populist gimmickery and manipulation so distorted the planning process and the development effort itself that we have had neither growth nor social justice during the last decade and a half.

A plethora of schemes for "social justice" emerged as a special feature of economic and fiscal management during the Fourth Plan and the subsequent Plan periods. But none of these schemes have got off ground so far and achieved the desired results. On the contrary, they have caused a large drain of resources and waste so that essential investment in the economy has been neglected. This, in turn, created conditions in which there has neither been growth nor social justice. This state of affairs was bound subsequently to lead to instability-economic as well as political.

The fact must now be at least recognised that it is silly to talk of employment and income generation for the masses or social welfare in isolation from the overall pattern and level of economic activity in our society. The problem, after all, is not one of simply setting aside certain sums of money in the government budgets—Central and States—and making arithmetical calculations of returns from such expenditures. The net effect of this approach can, in fact, be that while productive activity and investment are curtailed for want of funds, selected sections may get doles or non-productive employment for brief and uncertain spells. The result of such pursuit of easy ways and cutting of can be disastrous. The unfortunate part of this sto is that the lessons of the past have still not been lear and the same course with marginal or convenie adjustments is still preferred.

Time has, therefore, come to bluntly state that t problem of reconciling the need for rapid econon growth and mobilisation of adequate surpluse to me the demand of social justice requires fundamen solutions. What is required, above all, is that the st exercise much greater command over resources, fina cial and material, and its intervention in the develc ment process becomes more determined and purposel as well as comprehensive. But recent trends in econon policy seems to be moving in a contrary directic There is also the question with respect to the mann and the method by which the State acquires its con manding position in the development process. P experience has shown that mere fiscal measures investment in public sector projects alone cannot the trick. What is needed is direct acquisition of ava able physical resources on an extensive scale and th planned deployment, combined with structural refor in property relations, urban as well as rural, in ag culture as well as industry. But the political leadersl at the helm of affairs of all hues has been singula lacking in the ability and willingness to undertake th tasks. This has necessarily limited the scope of econon planning and the scope would seem to be further shrir ing with the passage of time.

Land Reforms

The problems of agriculture, the largest segment the Indian economy are admittedly closely connect with land reforms. The fact indeed is that regenerati of the rural economy and society is not possible with land reforms. But this is precisely the area where failure has been most glaring and tinkering with it l only aggravated the situation. A stage now seems be reaching where even lip-service to land reforms beginning to lose its charm for the political leadersh It may be worthwhile, in this context, to quote even a somewhat lengthy fashion from the report of the Ta Force on Agrarian Relations, which was submitted far back as in 1973. It said, "Enactment of progress

Adivasi women learning embroidery at Ranchi

*Special Correspondent, Economic & Political Weekly. The views expressed in this article are those of the author, and do not reflect the views of 'Yojana' or the Planning Commission.

measures of land reforms and their efficient implementation call for hard political decisions and effective political support, direction and control. In the context of the socio-economic conditions prevailing in the rural areas of the country, no tangible progress can be expected in the field of land reforms in the absence of requisite political will. The said truth is that this crucial factor has been wanting". Further, "In a society in which the entire weight of civil and criminal laws, judicial pronouncements and precedents, administrative tradition and practice is thrown on the side of the existing social order based on the invoilability of private property, an isolated law aimed at reconstructing the property relations in the rural areas has hardly any chance of success."

The above observations of the Task Force on Agrarian Relations are relevant not only to the question of land relations and land re-distribution but to all other areas of social justice—be it industrial relations, Harijan welfare, upliftment of backward classes or areas or financial and credit flows in the economy. It is not fortuitous, therefore, that the record in social justice measures is so dismal.

Employment

It may be worthwhile to take note of some stark facts in this context. The first pre-condition of enlarging, the scope of social justice is that people should be assured productive and gainful employment. All the rest is indeed secondary. But the number of chronically unemployed persons in 1978 are estimated to have swelled to 4.4 million. Underemployment measured in terms of person-days is estimated to have been 20.6 million in that year. Of the annual addition of about 5 million to the labour force, only 5.5 lakh or just 11 per cent are at present able to secure employment in the organised sector, leaving the remaining to take out a livelihood in agriculture or in petty and extremely low level of incomes in self-employment. It is not surprising, therefore, that the share of agriculture in the total work force remains around as much as 73 per cent after three decades of planned development. Within agriculture again, the number of landless agricultural workers has grown enormously which is admittedly a result of popularisation rather than modernisation of the agricultural economy in India. No wonder that the latest available estimates of those below the minimum acceptable levels of living or the poverty line place their numbers at about 290 million or 50 per cent of the population. Among them 160 million are estimated to have a consumption level below 75 per cent of the norm used in these estimates for determining the poverty line.

This state of affairs has other implications for the process and pattern of development. Considering the large numbers below the poverty line with no or insignificant purchasing power, prices of goods and services in the market have little relevance to them. All talk of controlling inflation and holding the price line would give them little relief. On the contrary, policies determined exclusively by concern with prices in the market lead to a situation where fiscal and tax reliefs are granted to sustain the purchasing power of a thin strata of affluence at the top and thereby also to secure enough demand for goods and services currently produced in the economy and sustain profitability of those producing them. It has been rightly said in this context that the pattern of production that has emerged in these conditions reflects the structure of effective demand as determined by the distribution of incomes rather than the needs of the mass of the people. The result is that an unduly large share of resources gets absorbed in production which relates to the maintenance of living standards of higher income strata. This again has its implications for the pattern of distribution of assets and concentration of economic power in fewer and fewer hands—both in industry and agriculture.

It will not do in these conditions to make token budgetary allocations for the Harijans and the landless or to set quotas for credit allocations to them and other similarly placed disadvantaged sections in rural and urban areas. These are cosmetic remedies. What is needed is structural reform of property relations, radical redistribution of economic assets and making such reform the starting point of a pattern of development and regulation of consumption which will ensure balanced development of the economy in which social justice will be ensured, above all, through gainful and productive employment for the masses of the people.

"Foreigners" in Punjab

UNLIKE the people, in some parts of the country, the Punjabis have been welcoming thousands of people from U.P. and Bihar to their State, the seat of green revolution. There are about 10 lakh people who have migrated to Punjab from various surrounding States. Since the advent of green revolution the requirement for farm labour in the Punjab had gone upto 78.65 per cent in the last decade. Also the wages of farm labour rose to 114 per cent. in the same period. These migrants from U.P. and Bihar have been helping the Punjabi farmer in his agricultural operation and furtherance of the green revolution. According to a study by Mr. D. R. Arora, Asst. Professor at Rural Sociology and Mr. Balbir Kumar Asst. Sociologist at the Punjab Agricultural University, about 66 per cent of the farm labour has come from tribal community of Bihar including Oraon, Haria and Nagasia. The remaining labour belongs to other Hindu castes; upper castes 4 per cent, intermediary castes 18 per cent and lower castes 12 per cent. Of these young migrants of 23 years of age, 20 per cent were educated up to the primary level, 18 per cent up to the middle class and 8 per cent up to matriculation. Most of these migrants possess land in their native places. These labourers have come mostly from Bihar, but there is a small number hailing from West Bengal, Orissa and U.P.

As these farm workers have come from a relatively underdeveloped State, they take delight in learning to run an electric motor or to operate a tractor. They have been learning the new agricultural methods being practised in Punjab. Most of them are of the opinion that they are taking more nutritious food in Punjab than in their own State. Their life has undergone a lot of change in their habits, lands and other aspects.

On account of more and more reliance on the willing hard work of the migrant labour force, some social scientists have expressed the fear that the Punjabi farmer is becoming lazy and comfort loving.

Plannin
and the
Private Sector

P. Chentsal Rao*

DURING the past three decades of economic planning, the Indian economy has been seeking to move away from the dead end of stagnation. We have only partially succeeded. The progress has been uneven. What is disheartening is that the period of growth has tapered off despite the advances that have been made earlier. There are other disquieting features: The major premise of our mixed economy that what the private sector and the public sector can do jointly will be appreciably more than what each can do by itself has run into heavy weather. The policy framework has got so cluttered that neither the private nor the public sector is forging ahead. Another aspect of concern must be that many of the industrial establishments, whether in the private or public sector, are operating on out-dated technology. Apart from the cost involved, we have lost an edge in the competitive international market. The importance of keeping abreast with modern technology has gained primacy, specially in view of the hike in oil prices and the consequent need to step up exports of Indian manufactures to meet the import bill on oil.

In the early fifties, India had only the rudiments of an industrial apparatus and was almost completely dependent on imported equipment and technology for running the apparatus. Even a ceiling fan was only assembled here and not manufactured—the varnish for the blades was from imported chemicals, the ball-bearings inside the fan were imported, and the wire as well as insulation about the wire were also from imported materials. Today the situation is completely different—India now produces equipment ranging from watches and electronic goods to heavy turbines the transformers. The range is extremely wide. The technical skill acquired by Indian engineers and workmen, during the last three decades, is of "dimension which could not have been even dreamt of in the early fifties". In this process of development the private sector played a very important role.

Growth Variations

In 1950-51, the last year of the pre-Plan era, the net national product of the country at constant (1970-71) purchasing power of rupee was only Rs. 167.3 billion but in 1978-80 it was as high as Rs. 456.4 billion over this period India's agricultural production rose by 146 per cent, industrial production by as much as 403 per cent and GNP by 178 per cent. Based on the production figures of the two end-points, the average annual rate of the growth of agricultural production works out to be 3.3 per cent, industrial production 5.9 per cent and net national product 3.7 per cent.

The above estimates of growth rates do not take into account the production gures for intervening years, and, therefore, they do not reflect the fluctuation in annual growth rates. The exponential rates of growth, based on the annual data for the entire Plan period, come to 3.4 per cent for the net national product, 2.8 per cent for agricultural production and 5.9 per cent for industrial production.

The average annual rate of growth fluctuated from one Five Year Plan to another. Calculating the growth rates on the basis of the end-year of each Plan, the highest average growth rate of 4.8 per cent was achieved in the Fifth Plan (covering the period 1974-75 to 1978-79) and the lowest of 2.8 per cent in the Third Plan (1961-62 to 1965-66). The Third Plan figure, however, is misleading because in the last year of the Plan there was a severe drought and since the growth rate is based on the 1965-66 figure it is under-estimated. If instead, 1964-65 figure is taken, the growth rate of net national product in the Third Plan comes to 4.4 per cent.

Industrial production increased at an average rate of 6.5 per cent per annum during the First Plan, 6.6 per cent in the Second Plan, and 9.0 per cent in the Third Plan. After the mid-sixties the rate of growth considerably decelerated to only 1.5 per cent during the 'Annual Plan period'. In the Fourth and Fifth Plan periods industrial sector made a partial recovery when its average growth rate rose to 4.7 per cent and 5.7 per cent respectively but it never reached the rates achieved in the earlier Plans.

If we divide the entire plan era into two halves, namely, 1951-52 to 1964-65 and 1965-66 to 1978-79, we observe some very interesting phenomena. The average annual rate of growth of net national product was 3.9 per cent in the first half of the Plan era and only 3 3 per cent in the second half. Agricultural production also increased at a higher rate of 3.7 per cent per annum during the first half as compared to 2 8 per cent per annum in the second. Similarly, industrial production increased at an average rate of 7.2 per cent in the first half and only 4.7 per cent in the second half.

Similar pattern is also found for the growth rates in real value added by agriculture and real value added by industry. The average annual rate of growth of value added by agricultural production during the whole period was 2.4 per cent—that during the first and second halves being 2.8 per cent and 2.1 per cent respectively. Value added by industry grew at an average rate of 5.4 per cent during the entire Plan period In this case also the growth rates in the first half (6 5 per cent) was much higher than that in the second (4.3 per cent).

From Companionship.....

During the first half of the Plan period, the attitude of the government towards the private sector of Indian industry was broadly one of companionship. The government depended greatly on the private sector to pursue a policy of rapid industrial development. The government's attitude towards the private sector was based on 1948 Industrial Policy Resolution, according to which "any improvement in the economic condition of the country postulates an increase in the national wealth; a mere redistribution of existing wealth would make no essential difference for the people and

*Secretary-General, Federation of Indian Chambers of Commerce and Industry.

would merely mean a distribution of poverty. A dynamic national policy might, therefore, be directed to the continuous increase in production by all possible means, side by side with measures to secure its equitable distributions". Only a few items were reserved for the state. The list was restricted to the manufacture of arms and ammunitions, production and control or atomic energy and the ownership and management of railway transport. A second list comprising coal, iron and steel, aircraft, shipbuilding, telephone, mineral oils, etc. was prepared in which new undertakings would be exclusively undertaken by the state except where the national interest made it necessary to secure the cooperation of the private sector. The rest of the field was left to the private sector. Finanacial institutions were also set up to assist the private sector. Thus, the Industrial Finance Corporation, the Industrial Credit and Investment Corporation of India and the Industrial Development Bank of India were set up with a large-scale financial grant by government to provide the wherewithal to the private sector industry. At the the State level too, State financial institutions were established.

The Second Industrial Policy Resolution in 1956 adopted a line which was not radically different from the one adopted in 1948. Though the new Resolution gave a more prominent role to the public sector, and the list reserved for the public sector was much larger, nevertheless the Resolution retained the concept of mixed economy and the area left open to the private sector was very wide. In actual practice, the industries set up by the state were those in which the capital investment was very heavy and gestation period was very long.

In acquiring technical know-how also there was a close cooperation between the government and the private sector. Initially, factories were installed on the basis of imported equipment of over 90 per cent. Then, in the interest of rapid development the government approved virtually turnkey projects, and foreign manufacturers were ready to take advantage of this policy. At the same time, there was reluctance on the part of foreign manufacturers to set up units in India for the manufacture of machinery. They were also not eager to pass on technical know-how to Indian partners. To tackle these types of problems, the government, in close cooperation with the private sector, shopped around the world for the acquisition of technical know-how. India purchased technical know-how not only from the Western countries such as USA, UK, West Germany, France, Italy, Switzerland, Sweden, etc., but also from USSR, East European countries as well as from Japan. India's technical collaboration agreements have been multinational in character, and where it failed in one country it succeeded in another, thus, making use of the very competitive spirit which forms the basis of the mixed economy. For instance, when Switzerland refused to pass on the know-how for the watch making, India got the technical know-how from Japan.

To Restrictions

Government's attitude towards the private sector started changing by the end of the Third Plan itself. In 1964, the government set up the Monopolies Enquiry Commission headed by a Supreme Court Judge. Though the majority opinion of the Commission did not favour any curb on "concentration of economic power" as such but the Bill which was finally enacted into law took the line that size had to be controlled irrespective of whether large business houses actually exercised monopolistic powers or not. In 1970, the government announced a new licensing policy on the recommendations of Industrial Licensing Policy Enquiry Committee. This policy, together with the Monopolies and Restrictive Trade Practices Act, put heavy restrictions on larger industrial houses which had made significant contribution towards rapid industrialisation of the country.

During the first half of the Plan Era the broad philosophy of the Government was to have a public sector which was to grow in importance alongwith a private sector, whereas in the second half more and more emphasis was given to the public sector. In the first half public sector was encouraged on the pragmatic ground that the investment was heavy and gestation period so long that it was beyond the competence of the private sector, while during the second half it was encouraged on the non-economic ground that the "commanding heights of the economy" should be with the public sector.

Since mid-sixties it has often been suggested that the industrial growth has not been rapid because the Indian industry does not spend enough money on research. But, unfortunately, the evidence does not support this contention. In the first half of the Plan Era, specially during the period covering the Second and Third Plans, the industrial growth was most rapid. And, interestingly, this was also the period when the annual expenditure on research was negligible and industries were established essentially, with technological know-how obtained from abroad. Indian scientists and technologists, engaged in the task of setting up production units based on technology transferred from abroad and adapted to local conditions, have done remarkably well. In a developing country like India the time and money that will have to be spent in the process of 'rediscovering' of a 'new' product that are already in commercial use elsewhere are far greater than the price of technical know-how purchased from abroad.

Modernise or.......

Technology does not stand still. It is changing rapidly in the western world. If India decides to avoid overseas payments for more economical newer processes, then its industrial units will soon be outmoded and the capacity of the country to export will diminish rapidly. Even the Soviet Union regularly purchases technical know-how from the Western world. A few years ago Mr. Kosygin, the Prime Minister of USSR was reported to have said, "In certain cases it is also more advantageous for us to buy licences from abroad than to aim at solving the problems ourselves. Acquisition of patent rights from foreign enterprises will lead in the new Five Year Plan to savings hundreds of millions of roubles, which can be used for research activities in certain other fields". This statement is equally valid for India. and, as pointed out in the very beginning, the need to be up-to-date in technology has assumed crucial importance to reduce cost and become competitive in the international market which is under the thralldom for rising oil prices. The composition of our exports must be such that manufactures with high value added contents' have a pride of place. To achieve higher growth in exports it would be necessary to avail of best technology and to put to use our abundant scientific and technical manpower. If this is not done as speedily as possible, our production process will further stagnate to the detriment of domestic consumers, employment and export effort. □

V.T.K.

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Conditions before Planning

THERE appears to be no doubt that, prior to the industrial revolution, the standards of living of the people in India and other countries in Asia were nearly as high as those of Europe. The widening disparties in living standards between the advanced countries of Europe and North America and Australia on the one hand and of Asia, Africa and South America on the other are due to the fact that these latter countries have not shared in the scientific and industrial revolution which has transformed the economies of the countries which are now highly industrialised. There is now a great awakening in these underdeveloped countries as the result of world causes. There are irresistible demands everywhere for rapid social and economic advance with the aid of the latest techniques of production. These 'emerging nations' are convinced that it is only in this way that they have a chance of survival in the modern world of science and technology. It is also realized that the state will have to play a dominant role in social and economic growth in these countries. The reasons for this can be summarized briefly. Many of them are at present behind the stage of growth reached by the Western countries round about 1800. They have to attain within a comparatively short period rates of growth which, in earlier years, took decades in countries that are now industrialised. The state alone can promote the preconditions of such growth—the institutional changes, the public services and the varied training and other programmes needed. The mobilization of the large capital and other resources needed by taxation and internal and external loans, can also be achieved only by state action. Also, the state alone can allocate resources—natural, financial etc.—to secure co-ordinated development in all sectors of the economy on a basis of priorities determined with due regard to national needs. Programmes of development and the precise part the state should play will of course vary from country to country according to its special conditions.

LATE Shri V. T. Krishnamachari was a Member of the Planning Commission from its inception and later its Deputy Chairman. In the words of Jawaharlal Nehru, "he has in effect embodied or represented our Planning Commission for ten years". The first and third of the three passages presented here are from V. T. K's book, "Fundamentals of Planning in India", published by M/s Orient Longmans, and the second is from the inaugural issue of 'Yojana' *dated January* 26, 1957.

In India during the last century, foundations were laid for social and economic advance. An educational system was established leading up to university education in English—in the humanities, in sciences, and in agriculture, engineering and other technical subjects. Side by side with this, administrative and technical services were built up in which Indians rose to high positions. There were also fairly large railway and road systems; posts, telegraphs and telephones; irrigation works and power generation. Industrial development was left to private enterprise and such industries as cotton textiles, jute, coal grew up under a policy of protection. The tea industry was also established. All these formed a base for the much larger programmes of social and economic advance included in the country's Five-Year Plans. In regard to industrial development there were three phases in the policies of the British Government. In the first period, a strict *laissez faire* policy was followed. The state's functions were confined to providing the essentials of good government. In the field of industries there was unrestricted competition. In the second, from 1923 onwards, a policy of protection to industries was accepted on the recommendations of the first Fiscal Commission which reported in 1922. The third phase came after the World War, with the Post-war Reconstruction Department set up by the Government of India (1941—46). In this, there was a complete reversal of previous policies and a planned economy in which the state would play a leading part in bringing about rapid industrialization was accepted.

In the report of the Fiscal Commission of 1949-50 and in the Planning Commission's Reports there are detailed assessments of the condition of the Indian economy in 1950 with a review of the effects on it of

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the Depression of 1929-30, the separation of Burma, the War and the Partition. The salient points may be set out briefly:

(i) Natural resources : The pressure on land is heavy. Cultivable area per head is small and there is much unemployment and underemployment in agriculture. Holdings are small and fragmented.

(ii) Water resources are available for irrigation and hydro-electric power. Irrigated area is increasing but there is need for more rapid development of irrigation and power generation. Mineral resources are not large for a country of India's size and population. The position in regard to iron ore, coal and manganese is fairly satisfactory, but conservation measures are essential for meeting future needs. Non-ferrous metals are in short supply except possibly bauxite. Increasing attention is being paid to the working of minerals.

(iii) Agricultural sector : Agriculture has remained practically stagnant with little change in the yield per acre or the techniques followed or the pattern of cultivation. Meanwhile population has continued to grow. After the separation of Burma and the Partition, the country has to depend on imports of foodgrains to feed its population and of cotton and jute for its important industries. Afforestation and soil conservation programmes are badly needed.

(iv) Industrial sector : Important industries—cotton textiles, jute, paper, cement, matches, soaps, etc.—have shown expansion. Producer goods industries have not developed, except for iron and steel production which at about 1.2 million tons is short of requirements.

(v) Foreign trade : During the last three decades India has been losing its share in world trade.

(vi) Railways and transport : A fairly large and efficiently managed railway system exists, built up by the Government of India and the former Indian States and worked according to general policies laid down by the Government of India. There is also a road system. Ports have also been developed.

(vii) Results of the war : During the war, the railway system had been run down. It needed considerable rehabilitation. There were inflationary pressures in the economy as the result of war expenditure and other causes.

To sum up : In the words of the Fiscal Commission, 'In spite of the advance made in some lines of manufacture, the deficiencies in different sectors of the economy still remain considerable and a great effort will be needed to make up the lee-way in agricultural and industrial production.' This is reflected in the per capita national income (Rs. 253 at 1948-49 prices) which is among the lowest in the world. Investment hardly amounted to 5 per cent of the national income ,not enough even to keep pace with the rate of population growth.

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Aims of Planning

We usually think of our Five Year Plans as comprising a series of projects or programmes—multipurpose and large river valley and electrical projects, steel plants, expansion of the railway system, etc. These are, of course, very important and it is hoped that every issue of *Yojana* will devote a section to a review of the progress of these projects and their effects on the country's economy. But our Plans have a much deeper significance. In the words of our Prime Minister, they are "much vaster"—"the mighty scene of a nation building itself, remaking itself : all of us working together to make a new India—not abstratcly for a nation—but for 360 million people". After attaining independence, the people of India are engaged in building up a new life for themselves. They are creating a new pattern of society. It should be the fundamental objective of the Five Year Plans to give form and substance to these efforts—to indicate the pattern of social changes that are aimed at and the steps by which these changes will be achieved.

Power tiller in operation

Our Constitution has placed before the country the broad outlines of the new pattern of society for which it should work, recognising that India has to advance along its own lines, in accordance with its genius and its cultural and other traditions. I should like to set out the essential features of this pattern of society.

In the first place, ours is a democratic Constitution As the Prime Minister has recently said, "we are firmly wedded to the democratic way of life". "Above all, we believe in liberty, equality, the dignity of the individual and the freedom of the human spirit".

Secondly, we aim at achieving a high and rapid rise in the standards of living of the people and a fuller and richer life for them through additional employment opportunities and increased production. An equally important aim is to achieve a balanced economy by the evolution of an expanding and diversified agricultural system, encouragement of cottage and small-scale industries and development of large-scale consumer goods and heavy industry. All these sectors of economy should be closely integrated. They should fit into and supplement one another.

Thirdly, we seek a social order in which justice-social, economic and political, shall inform all institutions of national life. The achievement of the widest

possible measure of social justice is an essential part of the pattern of society we seek to establish.

To sum up : we seek a democratic social order in which there will be a large and rapid improvement in standards of living through fuller employment, increased production and the widest possible measure of social justice.

Democratic plans like ours depend for their success on the active cooperation of every man and woman in the country. The object of *Yojana* is to appeal for such cooperation. What we seek is the widest possible understanding of the aims and objectives of the plans so that all of us may work unitedly in the war that is being waged against poverty and ignorance. There are no limits to what an awakened nation can achieve.

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The Role of the Planning Commission

There are comments on the Planning Commission's role from two totally different points of view. On the one hand, it is said that it functions as a super-cabinet and, on the other, that it is ineffective as its advice is not always accepted and it has no effective voice in the implementation of Plans Both comments appear to be based on a misapprehension of the role of a planning body in a parliamentary democracy. It might therefore be useful to strees the more important aspects of the position the Planning Commission occupies *vis-a-vis* the Union and State Governments.

When a Plan is under preparation the strategy of the Plan, the financial resources for it, the broad pattern and inter-sector allocations are settled by the Cabinet and National Development Council at a number of meetings, on the basis of proposals worked out by the Planning Commission in close consultation with the Union Ministries and State Governments and the other bodies mentioned. Within this framework, allocations are made by the Planning Commission according to priorities, after consultations with Ministries and State Governments which extend over several weeks. In fixing priorities, the Planning Commission examines projects and programmes in the perspective of the economy as a whole. In the nature of things, these allocations, which inevitably mean reduction of the demands of Ministries and State Governments, have to be accepted as the best possible in the circumstances. To this extent, the Planning Commission has an important role.

There is also another point. Priorities are not always fixed on purely economic grounds. Conflicting claims arise which have to be reconciled. There are, for example, claims of different regions for special treatment. Then, questions arise as to how far, in particular programmes, regard should be paid to social as opposed to economic factors. The place assigned to cottage and small scale industries in the Plans from the point of view of employment is an instance in point. Then there are broad considerations of social justice—the scope of land reform, labour laws, etc. In such cases decisions have to be taken through democratic processes from time to time. But the Planning Commission should work out the cost to the nation in economic terms, so that such decisions might be taken with full knowledge of the facts. A developmental processes gain in strength, decisions ma be expected to be taken more and more on nation considerations.

Other difficult issues also arise in planning. One c them is—what credit should be taken for improve ments in the standard of administrative and techn cal efficiency in the period of the Plan ? Here agai there can be no rigid criteria. On the one hand, ther should be steady improvement in efficiency. On th other, the standards aimed at should not be unrealistic In this, again, the Planning Commission has to forr its views after detailed discussions with all concernec Allied to this is the extent of public cooperation tha can be expected—especially community effort in agri culture. Here again, there are imponderables on whicl the Planning Commission has to take views base largely on those of the Governments concerned. A has been well said, 'A wide experience of men an affairs and a strong "feel" for what, with the huma instruments, will or will not work are needed here'.

There are, further issues relating to price policie on the effectiveness of which the success of Plan depend. On these, there is much room for differences of approach. It is an important duty of the Planning Commission to study price levels and thei effects on the economy and submit proposals from time to time for maintaining a stable level of prices

The Planning Commission has to make proposal in regard to social change—institutional changes and changes in attitudes and outlooks. It has also to suggest improvements in administration—policies and methods—Whenever in its view these are called for On these matters, again, there is need for frequent exchanges of view with the Union and State Ministers and mutual understanding.

When all this is said, the responsibility for implementing projects and programmes must rest with the Union and State Governments within their respective spheres of competence. The Planning Commission may advise but cannot claim that its advice should be accepted. Nothing is more fatal to good government than confusion of responsibility.

What has been said above shows the variety and complexity of the issues that arise in finding solutions to the problems of social and economic growth facing the nation. In this difficult task, the roles of the Planning Commission and the Governments are supplementary. The Planning Commission, viewing questions in the context of the economy as a whole and not being saddled with everyday problems of administration, can give useful assistance to Ministers in the formulation of projects and policies. The aim is that the Commission and Ministers should work together in close collaboration sharing their knowledge and experience. In this process, the principle that the Planning Commission should not give publicity to its differences with the Union and State Governents is useful and salutary. Once a Plan is accepted in Parliament, it becomes a national Plan which all should accept. It is in this spirit that methods and procedures are evolved and conventions established. ☐

Indira Gandhi on Planned Develo·ment

The Planning Commission

THE Planning Commission has played a valuable, even a historic, role. It has translated the economic vision of our nationbuilders into concrete policies, and has provided a useful forum for discussions between the States and the Centre. It would have been very difficult for the Government to achieve this without the Planning Commission. The objective and expert composition of the Planning Commission has naturally helped.

Plan Size

A small plan cannot fulfil the needs of the people. In a sense, it would mean a "freeze" on poverty for the poorest and the weakest. It is they who will be hurt by a small Plan, not those who are well off.

I do agree that we must live within our means Nevertheless, in a developing economy, there must be a dynamic concept of means. The more we work, the more we develop our resources and create wealth—the more will be enlarged our means and our ability to develop the economy still faster without external assistance. Of course, there are limits to this—limits set by our natural resources, human skill, organisational capabilities and foreign exchange. But the maximum we can do is the minimum we should attempt. Our task should be set and our progress measured in physical terms. It is not enough—in fact it is often misleading—to think and talk only in terms of money.

Taxation

Taxation is not merely an instrument of transferring resources from the people to the Government. It is also an instrument for transferring resources from the rich to the poor, and from consumption to investment. It is the mechanism through which services as varied as defence, roads and education are paid for.

What the level of taxation should be at any given time calls for a deep study of the prevailing situation as well as of the direction in which the economy should be moving at that point of time.

Taxation should not be considered as an issue between the Government which levies it and the business, the industry and the consumer who pay it, but should be viewed in terms of its impact on the economy, in terms of whether it acts as an accelerator or as a brake on the economy.

Bank Nationalisation

What is sought to be achieved through the decision to nationalise the major banks is to accelerate the achievement of our objectives. The purpose of expanding bank credit to priority areas which have hitherto been somewhat neglected—such as (1) the removal of control by a few, (2) provision of adequate credit for agriculture, small industry and exports, (3) the giving of a professional bent to bank management, (4) the encouragement of new classes of entrepreneurs, (5) the provision of adequate training as well as reasonable terms of service for bank staff—still remains and will call for continuous efforts over a long time. Nationalisation is necessary for the speedy achievement of these objectives.

Public and Private Sectors

We are apt to think of the public sector and of the private sector as if they were two different worlds. Efficiency is equally necessary for both. In both sectors, every attempt has to be made to cut down costs, to eliminate waste and to make our products competitive in international markets. Towards this end, we must make the maximum use of science and technology, of research and know-how. It is through a reduction in costs, rather than by exploiting the consumer in a sheltered market, that industry can give an adequate return to shareholders who, in the case of public sector enterprises, have to be counted in hundreds of millions.

Many of the difficulties of the public sector belong to the gestation period itself. Faulty planning with regard to concept, size, location, raw materials, design, choice or processes, equipment, personnel, contractual arrangements, of supervision, coordination, time-schedules, etc., has resulted in cost escalation and delay. Over-capitalisation, over-staffing, incidentally adding to township costs, inadequate work-study, lack of delegation of power, the application of secretarial codes and procedures to commercial undertakings, faulty system

Leander class Frigate built at Mezgaon Docks

of financial control and audit, and the lack of a well-thought-out personnel policy, constitute another set of problems. The proper programming of orders, pricing policies, quality and cost controls research and design development and the structure of management are other factors which need looking into. Labour relations have not always been satisfactory.

The final test lies in profitability, service and growth. If the public sector cannot pass these tests, then there is no meaning in it.

Joint Sector

For large industrial houses, the main scope for expansion exists in the 'core' and 'heavy investment' sectors where their contribution can be commensurate with their expertise and experience. However, even large houses cannot develop these sectors without substantial assistance from the public financial institutions. This is why we emphasize the importance of evolving a joint sector where the managerial ability of the private sector could be harnessed with support from financial institutions. Because of their sizeable equity holding, public financial institutions could ensure that larger social and economic objectives are not sacrificed in a relentless and often short-sighted and even surreptitious pursuit of private profit.

Industrial Relations

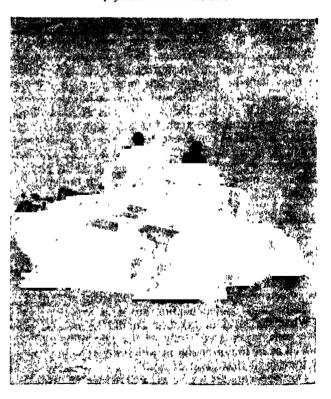
The community has a vital stake in problems affecting relations between management and labour, and can legitimately seek a voice in the solution of these problems through peaceful means. Organised labour rightly looks on the strike as the most powerful weapon in its armoury to be judiciously deployed in its struggle for a higher standard of living. But in a planned economy which seeks to promote economic growth, with progressively more equitable distribution of the gains of development, the rights of management as well as labour, like other rights available to citizens, must be subject to some regulations or restraint in the national interest. I hope that trade union leaders will display realism as well as statesmanship in appreciating the stake which the state has in the maintenance of industrial peace.

Foreign Collaboration

I do not rule out foreign collaboration, provided it is strictly to achieve quick results or to acquire know-how which we might not have. But collaborations should not be resorted to as easy short-cuts. The private and public sectors are equally capable in this respect. It is here that we recapture the vision and dedication of the pioneers, and draw inspiration from their spirit of *swadeshi*.

Efficient Irrigation

Only a fraction of the cultivated area is at present irrigated. It is important that we utilise fully and rapidly such irrigation potential as has been already

Vijayanta tank in action

created. I think this requires much closer association than is generally found between the irrigation engineer, the agronomist and the farm extension worker. Planning for the utilisation of water must commence at the time an irrigation project is conceived. It cannot be left to be taken up when construction is advanced or after storage has been complete.

Our rivers and our ground water are national assets which we must use to the best overall advantage. I am deeply concerned that there has sometimes been a controversy over what are termed inter-state river waters. I am sure that technical solutions can be found to safeguard the legitimate interests of every region or state, and that these matters are best considered in a rational and scientific manner rather than on the basis of emotions.

The development of irrigation, especially in arid tracts, is often a starting point of an economic and social revolution. It demands more tractive power and creates new demands for roads, markets and processing and storage facilities.

Rural Employment

Our experience with the rural works programme has not been altogether happy. Some works are taken up on an *ad hoc* basis and have not made much impact on the life of community. That is why we are now laying so much stress to see that rural works are related to local resources and local potential for development. Whatever work we undertake should form part of an integrated plan for the development of the area, and from the beginning we should devise satisfactory arrangements for the proper maintenance of the assets which are created under this programme.

Land Reforms

No single programme more intimately affects so many millions of our people than land reform. The sincerity and speed with which we implement land reforms will of course, materially influence the overall rate of our economic growth. The pace of agrarian reforms has been disappointingly slow and has not fulfilled the expectations of our people. Many of our laws are themselves defective. The machinery for their enforcement has been far from adequate. The illiteracy and ignorance of most tenants and the dual role of many

Prime Minister India Gandhi at a Planning Commission meeting alongwith Shri D. R. Gadgil and Shri R. Venktaraman.

Indian Women have won their political, economic and social rights. Women employees in the industan Anti biotics Pimpre

owners of being both landlords and money-lenders had made it difficult for tenants to insist on their rights. In the assessment of impartial observers, the enforcement machinery itself has tended to be biased in favour of the landlords. No programme of land reforms can be successful if it does not take these facts into account and devise measures by which they can be overcome.

Farm Subsidies

We must progressively seek to eliminate the element of subsidy in agricultural inputs, which are largely going today to the comparatively better-off farmers. We must also strive to divert part of the additional incomes which have generated into larger schemes of rural development which will benefit the smaller and poorer agriculturists.

Social Justice

Our planning should result not only in an integrated process of increased production, but rational distribution of the added wealth. The overriding inspiration must be a burning sense of social justice. While increased production is of the utmost importance, it is equally important to remove, or reduce, and prevent the concentration of wealth and economic power. The benefits of development should accrue in increasing measure to the common man and the weaker sections of society, so that the forces of production can be fully unleashed. A sense of involvement, of participation by the people as a whole, is vital for the success of any plan of rapid economic growth. This can only be evoked by securing social justice, by reducing disparities of income and wealth, and by redressing regional imbalances. A re-orientation of our socio-economic institutions in this spirit is accordingly the first necessity.

Our Socialism

What is our socialism? It means that the state takes upon itself the responsibility for wiping out poverty, for initiating steps which will increase production, for modernising our economy by establishing key modern industries, for enforcing social purpose in all economic activities, for reducing disparities and setting right the historic inequalities between different classes and different regions, and, in particular, for checking and preventing the growth of monopoly.

Weaker Sections and Backward Areas

In planning for the future, we have to take particular care to see that the benefits of development are

spread as widely as possible. Apart from specific legislative and administrative measures for preventing concentration of wealth and economic power, it is necessary to incorporate in our plans positive programmes for the weaker sections of the people, including in particular small farmers, farmers in dry areas and landless labour.

The question of assuring certain minimum wages for landless labour has also to be pursued with vigour. Through a package of such fiscal and legislative measures, it should be our endeavour to promote a more equitable distribution of the fruits of development in the countryside. Similarly, in the industrial field, concrete steps must be taken for a wider dispersal of enterpreneurship ; indeed in the execution of all our programmes, we should keep the needs of the common man and the small producer prominently in view. The benefits of development should accrue more and more to the relatively less privileged classes, such as the Scheduled Castes, Scheduled Tribes and others. Only thus can we create a sense of involvement in our developmental programmes among all sections of the people.

We must also initiate positive measures to reduce regional imbalances, as otherwise the tensions caused by such imbalances will inhibit the very process of development. The normal operation of economic forces is so overwhelmingly weighed in favour of areas which are already developed that a wider dispersal of industries can be secured only through the positive intervention of Central and State Governments.

Women's Welfare

A major task for the educated Indian women today is to make reality catch up with the opportunity created by law. Indian women have won their political, economic and social rights. But what have we done to translate these rights into realities ? The work in Assemblies, in Parliament, in Committees and commissions does not take us far. What is needed is proper organisation and door-to-door work, for bringing about a community of interest between the educated women and the not-so-educated women of India, so that they can act together in the national interest.

Family Planning

Family Planning in our country is an essential part of our whole strategy of enlarging welfare. Greater welfare is in fact the only reason for family planning. We need it not because we are against more children, but because we want every child to have the best possible opportunity in life. We want our children to inherit a better world than our own. This is the aim of every father and mother and this is the objective of planned development.

The inaugural telecast of SITE programme being viewed in a village

A weaver at his loom

Scientific Approach

It is a measure of our resolve to give to science and technology an important place in our scheme of things that India has made considerable investment in stimulating their growth. The awareness of science and technology is part of our national policy and we have made strenuous efforts to give practical shape and content to this ideology in the form of institutions.

And yet we must admit that all these developments have not made a significant impression on the consciousness even of our scientists, educationists and policy planners. We do still continue to lead a somewhat schizopherenic existence—one half of our individual self pays homage to science and the scientific approach, while the other half remains deeply rooted in the past. Paradoxically enough this applies even to some who work in science.

Towards this end (cut down costs), we must make the maximum use of science and technology, of research and know how

Brain Drain

Large numbers of our trained scientists and technical personnel are being drawn to other countries. The nation needs their talent. Naturally, we are not in a position to offer the salaries or the opprtunities which are available in the developed countries. But lack of encouragement and the denial of ordinary facilities do aggravate the situation. This matter needs to be looked into carefully, and urgent steps taken to remedy the conditions of work of our bright young people. I believe that we cannot advance science in the country without involving our young scientists and technicians in policy-making decisions which have a bearing on sceince and technology.

Ecology

In the last century, and especially during the last three or four decades, India has been denuded of her forest wealth. The wanton felling of trees has changed the landscape, affecting climate. Deforestation is creating a major problem of soil erosion. A massive campaign is necessary now to educate our people in the first principles of natural conservation. We must teach them, from their early school days, to become planters and protectors of trees and to care for animals.

Industrialisation is not an unmixed blessing. Man can cut down in a moment what nature has taken millions of years to fashion. Many advanced countries are deeply repenting their shortsighted vandalism. The task they now face is to restore freshness to the air, cleanliness to the water and greenery to the soil, and to help in the survival of many dying species of plants, of animals and birds and even insects, for they are all part of nature's delicate balance. We can learn from their experience and avoid their mistakes. Nature is not static, but ever changing; yet it does so in a manner that the balance is constantly being adjusted. It is the upsetting of the balance and the growth of disparities which cause the most harm and create the greatest tensions. Thus we must make every effort that growth and development are balanced as between man and man and also between man and nature.

Agitations Hamper Progress

Indeed, each of our States has some problems. But we ought to know that we cannot solve all our economic problems to our satisfaction, because our resources are not adequate. We should pause and take time to think and to consider whether agitation do not further deplete these limited resources and, therefore, hamper and delay developmental programmes. These constant agitations or threats of agitation in the country put a great strain on the administration. □

7 DPD/80—6

Shri Ashok Mehta, Prof. D. R. Gadgil, Shri D. P. Dhar, Shri P. N. Haksar,
Some of the Deputy Chairmen of the Planning Commission

Functions of Planning Commission

THE objectives of India's developmental planning and its social premises are derived from the Preamble to the Constistution which assures every citizen adequate means of Livelihood, opportunities for employment and a socio-economic order based on justice and equality. When the planning process began in 1950, India had no model to follow in its unique experiment of building a socialist order within the framework of democratic institutions. India evolved its own policies, techniques and procedures in the formulation as well as implementation of its development plans. The basic approach has accordingly always been pragmatic, subject to the overall objective of a planned economy for the establishment of a socialist society. The process has been undergoing changes periodically in the light of experience and to suit the changing conditions. India has so far formulated and implemented fiive Five Year Plans.

The Planning Commission was constituted by a Government of India Resolution of March 15, 1950. The functions assigned to the Commission are to :

(i) make an assessment of the material, capital and human resources of the country, including technical personnel, and investigate the possibilities of augmenting such of these resources as are found to be deficient in relation to the nation's requirements ;

Yojana Bhavan

(ii) formulate a plan for the most effective and balanced utilisation of the country's resources;

(iii) on a determination of priorities define the stages in which the Plan should be carried out and propose the allocation of resources for the due completion of each stage;

(iv) indicate the factors which are tending to retard economic development, and determine the conditions which, in view of the current social and political situation, should be established for the successful execution of the Plan;

(v) determine the nature of the machinery which will be necessary for securing the successful implementation of each stage of the Plan in all its aspects;

(vi) appraise from time to time the progress achieved in the execution of each stage of the Plan and recommend the adjustments of policy and measures that such appraisal may show to be necessary;

(vii) make such interim of ancillary recommendations as appear to it to be appropriate either for facilitating the discharge of the duties assigned to it, or, on a consideration of the prevailing economic conditions, current policies, measures and development programmes, or, on an examination of such specific problems as may be referred to it for advice by Central or State Governments.

The Commission is presided over by the Prime Minister. It has a Deputy Chairman. There is also a Minister of Planning. The Commission has eminent economists and experts in various fields as full-time Members.

The composition of the Commission as on August 1, 1980 is as follows:

Smt. Indira Gandhi	—Prime Minister and Chairman
Shri Narayan Datt Tiwari	Dy. Chairman & Minister of Planning
Shri R. Venkataraman	Minister of Finance and and ex-officio Member
Dr. M.S. Swaminathan	Member
Dr. Man Mohan Singh	Member
Shri Mohammed Fazal	Member-Secretary

Each Five Year Plan provides for a scheme of investment and for basic policies and institutional changes which are designed to achieve certain major policy aims. In proposing these aims an attempt is made to take into account the progress of the economy over the past and the objectives to be realised in the course of the next ten or fifteen years.

In the main the greater part of the Plan refers to programmes of development undertaken by the Central and State Governments and by Local Authorities. These include a variety of measures, some involving direct enterprise and management, some in the nature of extension and promotion and others providing for training, research and other methods of raising productivity.

Plans in the private sector are in the nature of estimates and forecasts undertaken in consultation with the representatives of industry; adequate provision is made for financial resources, including foreign exchange, and the requisite material resources to facilitate the execution of the plans. The levels of production aimed at are also in the nature of estimates, although they serve as target guides.

Annual Plans are drawn up in the context of Five Year Plans. Work on the annual plan precedes the preparation of the annual budget. Each annual plan takes into consideration the investments etc., for the following year. □

How A Plan is Formulated

THE preparation of a Five Year Plan is usually spread over a period of two to three years. The first stage is the consideration of the general approach to the formulation involving an examination of the state of economy, an appraisal of the past trends in production and rate of growth in relation to the long-term view of the economy. Preliminary conclusions on these and related matters are submitted by the Commission to the Central Cabinet and to the National Development Council. The Council is presided over by the Prime Minister and is composed of Union Cabinet Ministers, Chief Ministers of States and Members of the Planning Commission. On their approval these are published in the form of a document and circulated widely for country-wide debate.

The second stage consists of studies which are intended to lead to consideration of the physical content of the Plan. While these studies proceed, the Planning Commission constitutes groups for each sector, composed of its own specialists and those of Ministries and non-official experts, which review the situation in their respective fields and formulate assumptions to be made in the formulation of the Plan and indicate targets of production to be achieved.

While preliminary documents are being debated throughout the country, the Commission holds detailed discussions with the Union Ministries, State Governments and Union Territories at the highest level. The Consultative Committee of Members of Parliament on Planning keeps in close touch with the Plan formulation constantly by periodic meetings and informal discussions.

On the basis of preliminary studies undertaken by the groups and discussions with the various interests, the Commission presents, the main features of the Plan under formulation into a draft plan which is discussed in detail by the Cabinet and is placed again before the National Development Council. With the approved of the Council, the Draft Plan is published for public consideration and country-wide debate.

The comments and suggestions on the Draft Plan offered by Members of Parliament and people from different walks of life are taken into consideration in the preparation of the final document on the Plan. This document prepared by the Planning Commission outlines the objectives, policies and programmes of the Plan. It is once again submitted to the Cabinet and the National Development Council.

With such modifications as the National Development Council might suggest, the document is presented to Parliament for final approval. □

* * *

Thirty Years of Planning : A Round Up

Agriculture

S. C. Tripathi and Sada Nand*

THE table below gives area, production and yield of foodgrains and commercial crops in the country during 1949-50 and 1978-79 :—

A—Area in lakh hectares
P—Production in lakh tonnes
Y—Yield per hectare in kgs.

It would be seen from the above table that while area under foodgrains during the period increased by 29 per cent, the total production increased by 139.2 per cent. The increase in yield was also of the order of 85.4 per cent. Of the total increase in production of foodgrains wheat nearly increased by 4.5 times and rice by 1.29 times. Except for pulses where the increase is nearly 50 per cent, all other foodgrains have given good account during the thirty years of planning in the country.

There has been a massive increase in the total production of commercial crops too. However, productivity in respect of five major oilseeds and jute

Area, production and average yield per hectare during 1949-50 and 1978-79

Crop	1949-50			1978-79			percentage increase		
	A	P	Y	A	P	Y	A	P	Y
Rice	305.2	235.4	771	402.0	538.3	1339	31.7	128.7	73.7
Wheat	97.6	63.9	665	222.2	349.8	1574	127.7	447.4	140.3
Jowar	155.1	58.7	378	161.3	115.6	717	4 0	96.9	89.7
Bajra	92.6	28.4	306	113.4	55.1	486	22.5	94.0	58.8
Pulses	201.7	81 6	405	335.5	121.7	517	16.6	49.1	27.7
Other Cereals	140.6	81 2	—	146 8	133.2	—	4.4	64.0	—
Total Foodgrains	992.8	549.2	553	1281.2	1313.7	1025	29.0	139.2	85.4
Five major oilseeds	100.7	52.3	519	160.2	95.5	596	59.1	82.6	14.8
Cotton	46.3	@27.5	95	80.7	79.3	167	63.7	188.4	14.8
Sugarcane	14.7	501.7	3420	31.2	1564.5	5016	112.2	211.8	46.7
Jute & Mesta	4.7	31.2	1190	12.6	*82.9	1184	168.1	165.7	0.5

@lakh bales of 170 kg. each
*lakh bales of 180 kg. each

*Dy. Adviser and Director respectively Agricultural Division, Planning Commission

and mesta has not been able to keep pace with other commercial crops and/or foodgrains.

Previously we used to import foodgrains worth hundreds of crores of rupees, now we have built up adequate food stocks and are in a happy position to export certain limited quantities of foodgrains to other needy countries. The strategy that brought about this happy position include reform of an antiquated land system which was inhibiting agricultural production, setting up a nationwide agricultural extension service, revitalisation of the cooperative movement, expansion of irrigation facilities on a large scale, strengthening and improving a number of specialised institutions for providing credit to agriculture and for giving special assistance to the weaker sections of the population.

The high yielding varieties programme for foodgrains was launched in a big way which made us capable of bringing about a Green Revolution in the country. A new dimension was imparted to the expansion of agricultural programme through popularisation of balanced use of nitrogenous, phosphatic and potassic fertilisers, strengthening of soil testing facilities, construction of adequate storage capacity at various levels, plant protection measures, ground and aerial spraying programmes, provision of custom hiring services for agricultural implements and machinery and through greater institutional financial support to programmes of agricultural development.

The cultivation of high yielding varieties of paddy, wheat and millets was started from 1967. The coverage in 1966-67 was about 4.66 million acres and over the years it has increased to 35.2 million hectares in 1979-80 and is targetted at 48.0 million hectares by 1980-81.

Fertiliser consumption of nitrogenous, phosphatic and potassic fertilisers is indicated in the following table :—

(lakh tonnes)

	N	P	K	Total
1965-66 . .	5 75	1.32	0.77	7.84
1977-78 . .	29.13	8.67	5.06	42.86
1978-79 . .	34.20	11.06	5.91	51.17
1979-80 (ant.ach.)	36.8	11.6	5.8	54.02
1980-81 (target) (Annual Plan States)	45 9	16.7	7.6	61.0 (Tentative)

The area benefitted by the programmes of minor irrigation is showing considerable acceleration in the pace of development in this sphere. This area is expected to go to 30 million hectares in 1979-80 as against 12.90 million hectares in 1950-51.

The pace of coverage of area under plant protection has also considerably accelerated. The consumption of pesticides (technical grade material) is estimated at 60 thousand tonnes in 1979-80 as against the actual consumption of 54.1 thousand tonnes in 1977-78 and about 40 thousand tonnes in 1973-74.

The consciousness towards double/multiple cropping is on the increase. Efforts are being made by the State on a systematic basis to encourage the production of special cash crops between the rabi and kharif seasons.

Organised arrangements for the production/supply and distribution of improved seeds, particularly seeds of high yielding varieties are being developed. The National Seeds Corporation, the State Farms Corporation of India, the State Governments and Agricultural Universities are sparing no efforts in solving various problems of production, multiplication and distribution of improved seeds.

Efforts have also been made to diversify and broad-base the agricultural credit structure in the country and considerable success has been achieved in these directions. Cooperative credit structure has been enabled to play a greater role through strengthening of cooperative institutions, amalgamation or elimination of weak societies and increasing support from the Central and State Governments and the Reserve Bank of India.

The Indian Council of Agricultural Research has been reorganised and its extension education system strengthened through Krishi Vigyan Kendras. Arrangements have been made to transfer research findings to the farmers on a nationwide basis, under the "Lab to Land" programme.

Package programme approach for the increased productivity of certain cash crops, pulses, etc., have been launched with a view to increasing the per-unit productivity of these crops in the country.

Such of the crops which have not fared too well are being given special attention in the Sixth Five Year Plan which is being formulated presently. Also, special emphasis is being given to augment production of export-oriented agricultural commodities so as to earn much-needed foreign exchange.

More Milk and Eggs

Under Animal Husbandry, the strategy continued for increasing the productivity of livestock for augmenting production of milk, eggs and wool and to improve the economic lot of farmers in the rural areas engaged in raising of livestock. The progress achieved is indicated in the following table :—

Item	Unit	1965-66	1968-69	1978-79	Target 1984-85
1. Millk	Million tonne	20.00	21.20	29.32	36.87
2. Wool	Million Kgs.	N.A. (1973-74)	30.10	32.92	39.38
3. Eggs	Million Nos.	4100	5300	11290	16510

During the earlier Plans, development of cattle primarily aimed at production of dual-purpose cattle through selective breeding and grading up among indigenous breeds. In view of the large gap between the availability and demand for milk, a shift was made for augmenting milk production through crossbreeding of the indigenous cattle with exotic milch breeds. In the recent past the efficacy of frozen semen technology has been established and this technique is being progressively introduced in all the States.

Rapid improvement in poultry production both for eggs and meat has been made which becomes evident from the increased egg production. Apart from introduction of high-yielding hybrid stock from abroad, development of improved indigenous strains both in the private and public sector has been achieved in order to ultimately have self-sufficiency in the supply of poultry breeding stock.

Development of sheep both for wool and mutton through crossbreeding with exotic sheep breeds have been introduced in the sheep breeding areas. Selective breeding for carpet wool production also received continued attention. Efforts have been initiated for pelt and fur production and encouraging results have been obtained in the limited trials conducted so far.

A special achievement under animal health control is the reduction in the number of Rinderpest disease outbreaks in the country. A stage has been reached for launching a containment and eradication programme. Another breakthrough achieved is the large-scale production of Foot and Mouth disease vaccine as a supporting input for crossbreeding in cattle.

A small beginning was made in the First Five Year Plan for placing urban milk supply through the organised sector. With the successful experiment of cooperative dairying in Anand, the same concept was accepted for developing dairying throughout the country. A major breakthrough can be said to have commenced with the launching of the Operation Flood project for taking a commanding share of the milk markets in the four metropolitan cities of Bombay, Delhi, Calcutta and Madras under the organised Sector. Cooperative milk unions have been started in 17 milk sheds which operated feeder balancing dairies, cattle feed plants, etc. Integrated milk production-cum-marketing projects were started with World Bank assistance in the States of Karnataka, Rajasthan and Madhya Pradesh.

Fillip to Fishing

Modernised marine fishing industry and scientific culture of fisheries in inland waters was given a start only with the advent of planned development in the country. Sea fishing which was confined to coastal areas using country crafts was gradually changed into operation of mechanised fishing boats and deep sea fishing vessels. To facilitate operation of such vessels a number of large and small fishing harbours providing landing and berthing facilities have been established all along the coast line.

Considering the large scope of augmenting inland fish production through scientific cultural practices research efforts were directed towards this objective. Significant achievements made in this direction are fish seed production through induced breeding techniques and intensive aqua-cultural practices involving major Indian carps and exotic Chinese carps. Such composite cultural practices have demonstrated the possibility of increasing the fish production from a level of 600 kgs. per hectare to 3,000/4,000 kgs. per hectare under field conditions. In the recent past success has been achieved in the cultivation of valuable air-breathing fishes under intensive culture. Considerable advances have been made in the raising shell fishes and fin fishes in brackishwater areas. In order to ensure economic returns to fishermen for their catches, a network of ice plants, cold storages, frozen storages and processing facilities have been developed at a large number of landing centres and internal markets. Progress achieved in respect of marine and inland fisheries production may be evident from the figures indicated in the table below :—

Sl. No.	Item	1961 Achievement	1971 Achidevement	1979-80 Ant. Ack.	1980-85 Targets
1.	Fish production ('000 tonnes)				
	(i) Marine	684	1162	1619	2329
	(ii) Inland	277	690	911	1303
	Total	961	1852	2530	3632
2.	Export				
	(i) Value (Rs. crores)	4.63	39.17	263.00	530.00
3.	Mechanised boats (Nos)	2161	7861 (1968-69)	16100	21000
4.	Fish seed production (Million)	N.A.	450 (1968-69)	1085	2300

Fibre bed mist eliminator

NO more are we dependent on imported technology to control the pollution caused by the exist gases in the sulphuric acid plants. A fibre bed mist eliminator, developed in India, controls the fine acid mist present in the gases which harms vegetation, is dangerous to human and animal life and reduces the efficiency of the equipment.

The mist eliminator consists of a packed bed of glass fibres between two concentric screens. Mist particles are collected on the surface of these fibres, drained down the inside screen and recovered.

The mist eliminators developed by Larsen & Toubro Ltd., have replaced imported technology by indigenous one of equal efficiency and at less cost, for which they are awarded the G.S. Parkhe Industrial Prize by the Maharatta Chamber of Commerce and Industry.

Irrigation

K. M. Macheshwar*

IN the year 1947, the effect of drought, Second World War and the Partition of the country caused a massive deficit in food supplies and naturally, at the beginning of plan era in 1950, emphasis was placed on irrigation development. This was important because the scope available for expansion of the net cultivated area initially was limited. The net cultivated area increased from about 115 m. ha. in 1949-50 to about 145 m. ha. in 1979-80. The increase in agricultural production has, therefore, been planned to be achieved mainly throug multiple cropping in the same area and raising yiekls.

When planning started in 1950-51, irrigation schemes were divided into three categories : major, costing more than 5 crores each; medium, costing individually between Rs. 10 lakhs and Rs. 5 crores; and minor costing less than Rs. 10 lakhs each. According to the revised classification in vogue since April 1978, projects having Cultural Command, Area (CCA) of more than 10000 ha. each are classified as major projects, those having CCA between 2,000 and 10,000 ha. as medium schemes and the schemes having CCA of less than 2,000 ha. each are categorised as minor irrigation schemes. This classification has helped to adjust the technical and administrative scrunity of irrigation schemes according to their magnitude and complexity.

The total area irrigated in the country stood at 22.6 m.ha. in 1950-51—917 m.ha. from major and medium irrigation projects and 12.9 m.ha. from minor irrigation projects. As a result of massive investment made in the successive plan periods, the total irrigation potential has been more than doubled—at the end of 1979-80 it was 56.7 m.ha., 26.7 m.ha. from major and medium irrigation and 30.0 m.ha. from minor irrigation schemes. Thus, an additional irrigation potential of 17 m.ha. from major and medium irrigation schemes. Total investment on these schemes during the period was 7531 crores. The increase under minor irrigation during the corresponding period was 17.1 m.ha and it was acheived through an outlay of Rs. 2513 crores under the public sector and Rs. 2277 crores from the institutional sources, i.e., credit made available by the Land Development Bank, commercial banks and coorpertive banks with refinancing facilities made available by the Agricultural Refinance and Development Corporation. Besides, a sizeable investment was made on minor irrigation schemes from private sources of the farmers themselves in achieving the increase of 17.1 m.ha. in the irrigation potential from minor irrigation schemes.

The corresponding figures of investmen during the successive plan periods is given in the following table :

TABLE 1

(Rs. Crores)

Plan periods	Major & Medium	Minor			Grand Total
		Plan outlays	Institutional	Total	
1. First Plan	380	76	Neg	76	456
2. Second Plan	380	142	19	161	541
3 .Third Plan	581	328	115	443	1024
4. Annual Plans (1966-69) . .	434	326	237	563	997
5. Fourth Plan (1969-74) . .	1237	513	661	1174	2411
6. Fifth Plan (1974-78) . . .	2442	631	780	1411	3853
7. 1978-79 & 1979-80	2077	497	465	962	3039
Total	7531	2513	2277	4790	12321

The table gives the development of irrigation potential during the successive Plan periods since 1950-51 :

Engineering Skill

The important projects undertaken and completed since the start of the planning area comprise Bhakra-Nangal, Rajasthan Canal Stage-1 and Beas Projects on the Indus system; Ramganga Dam, Sarda Sahayak, Kosi, Matatile, Gandhisagar, Ranapratap Sagar, Jawahar Sagar, Kosi and Kangsabati Projects on Ganga River system, Kadana Project on river Mahi, Ukai Project on River Tapi, Hirakud Dam Project on river

*Joint Adviser I & CAD, Planning Commission.

Nagarjunasagar Dam project in South India

Mahanadi; Jayakwadi on river Godawari and Nagarjunasagar, Tungabhadra, Malaprabha, Ghataprabha and Upper Krishna Projects on river Krishna system. Thus, most of the major irrigation projects in India were completed after Independence. This is a great achievement and a tribute is due to our engineers and the project workers who made this possible.

With the adoption of the modern technology, irrigation engineering has made significant advances during the last 30 years. The Indian engineers have developed a high degree of expertise in the planning, design and construction of a small and high dams as well as the canal systems. Pong Dam (of Beas Complex) across river Beas and Ramganga Dam across river Ramganga are the highest earth-fill dams in Asia. Both these dams have been functioning satisfactorily after their commissioning. The other notable achievement in hydraulic engineering is the long distance transport of waters to needy areas through Rajasthan Canal.

Lift irrigation from rivers has rapidly expanded to cover many areas which were drought prone and backward. The new technique of large-scale pumping from the rivers was developed through installation of pumpsets on floating barages. Some significant examples are the Dalmau Pumped Canal (Rae-Bareilly district, UP)

TABLE 2

(Irrigation potential in m. ha. (Gross)

Period	Major Medium	Minor Irrigation			Total Irrigation
		Ground	Surface	Total	
1 Pre-Plan (1950–51)	9.70	6.50	6.40	12.90	22.33
2 End of First Plan (1955–56)	12.19	7.63	6.43	14.06	26.25
3. End of Second Plan (1960–61)	14.33	8.30	6.45	14.75	29.08
4. End of Third Plan (1965–66)	16.56	10.52	6.48	17.00	33.56
5. End of Annual Plans (1968–69)	18.10	12.50	6.50	19.00	37.10
6. End of Fourth Plan (1973–74)	20.70	16.50	7.00	23.50	44.20
7 End of Fifth Plan (1977–78)	24.77	19.80	7.50	27.30x	52.25
8 End of 1979–80	26.70	21.99	8.01	30.00	56.70
9. Ultimate feasible	58.50	40.00	15.00	55.00	113.50

of capacity 960 cusecs and Bordikerai (Assam) pumping station of 600 cusecs on river Brahmaputra. In addition, 'pucca' pump-houses of various capacities have been constructed throughout the country on some canal system and reservoirs behind the dams and barrages to cover the areas which were earlier considered inaccessible from the flow irrigation. Examples of such bigger pumping stations are the Bikaner-Lunkaransar lift station from Rajasthan Canal Stage-I, Pt. Jawaharlal Lift Irrigation (Haryana) and Sona Pump Canal (U.P.).

With intensification of rural electrification and availability of institutional finance to the farmers, the dugwells and pumpsets have become very popular and their numbers have increased very fast. This has also contributed significantly in stabilising the service from the gravity canals in large tracts.

The Irrigation Research Institutes have done commendable work on hydraulic models and the research on materials. Today, we are using our own air entraining agent for improving the workability of cement-concrete. The Plan era has been the poineer of the use of selected fly ashes as a part replacement of cement as well as admixture in cement-concrete mixes to save coment, reduce heat of hydration and increase the impermeability of cement-concrete.

The progressive development of minor irrigation works in terms of physical units (excluding tanks and diversion schemes for which precise figures are not available) is given in the following table :

Command Area Development

In order that optimum benefits could be derived from the huge investment being made in the irrigation sector, a comprehensive programme of Command Area Development was drawn up in the beginning of the Fifth Plan. Programme like fixing and enforcing of suitable cropping pattern, strengthening of extension, training and demonstration, planning and ensuring the supply of inputs, etc., were considered essential for effective and efficient exploitation of the irrigation potential created in the command areas. The need for an integrated area development approach was also recognised requiring action in several discipline like irrigation, soil conservation, agricultural extension and cooperation along with due support from credit and services organisations It was also recognised that a unified agency, namely, the Command Area Development Authority, could ensure better-coordination of the various disciplines at different levelt. The construction of field channels, field drains, land levelling and land shaping etc. were taken up in a big way. So far, 76 major and medium irrigation projects have been covered under the CAD Programme.

In order to accelerate the progress of construction of field channels, the Planning Commission, in their Circular of October 1979, suggested to the State Governments to take up the construction of field channels upto 5-8 ha blocks in irrigation commands as a part of the project cost, but the maintenance has to be the responsibility of the farmers. The Centre is also assisting the States in some of the command area activities like surveys and planning, establishment of CAD Authorities, equity capital support to Land Development Corporations, etc., construction of field channels and other OFD works, development of groundwater through subsidies to small and marginal farmers, and so on.

TABLE 3

DEVELOPMENT OF GROUNDWATER STRUCTURE

(In '000 Nos.)

Period	Dugwells	Pvt shallw TWs	Public deep TWs	Electric pumpsets	Diesel pumpsets
1. Pre-Plan (1950-51)	3860	3	2.4	21	66
2. End of Second Plan (1960-61) .	4540	20	8.9	200	230
3. End of Annual Plans (1968-69) . .	6110	360	14.7	1090	720
4. End of Fourth Plan (1973-74) . .	6700	1140	22 0	2430	1750
5. End of Fifth Plan (1977-78) . .	7425	1700	30.0	3300	2350
6. End of 1979-80	7777	2118	36.0	3950	2650
7. Ultimate feasible	12000	4000	60.0	12000	5000

The Government of India had set up, at the Centre, a Commission to look into the various aspects of the irrigation sector. This Irrigation Commission submitted its Report in 1972 and drew attention to the importance of command area development, national planning of water resources, increase in water rates, etc. The Centre has also prepared a Model Irrigation Bill and has circulated the same to the States for their consideration. During the Fifth Plan, the Planning Commission laid down certain guidelines for studies of the water needs of drought-prone areas in the country and to identify the surplus sources to benefit these areas. Work in this regard has been in progress in the Central Water Commission. The Union Ministry of Irrigation and the Central Water Commission have also been engaged in working out broader details of linking of rivers for increased irrigation facilities in future.

Flood Control

A national programme was launched in 1954 for effective flood control measures. The programme was divided into three phases : immediate, short-term and long-term. The immediate phase was devoted to intensive collection of data and implementation of emergent flood control measures. The short-term program-

ne which was roughly to coincide with the Second Five Year Plan, envisaged the construction of embankments, channel improvements, raising of villages, protection of towns, etc. The long-term phase envisaged the construction of storage reservoirs, stabilising the benefits of works already executed and taking up additional works of embankments, river training works etc.

The construction of embankments to protect against inundation has been the main method of flood control. Kosi embankments, in this connection, are well known. There 2.6 lakh ha. area was subject to annual flooding. In addition, land used to be rendered unfit for cultivation on account of deposition of sand and the river had also shown a tendency to move westward. After the construction of Kosi embankments, these adverse effects have been reasonably checked. The provision of embankments has also resulted in the construction of a network of roads, providing improvement and quick communication facility in the area which, in turn, has added to the prosperity of the people. The railway lines in this area, which used to get cut off in the monsoon months, are now open throughout the year. In Assam, Dibrugarh town has been afforded protection and a large number of embankments have been constructed since 1954.

The improvement of drainage channels has also been intensified during the Plan era. Important examples are the drainage network in Haryana and Punjab. Improvement in the drainage channels in the delta area of Andhra Pradesh has also been taken up.

Since the inception of flood control programme in 1954, the total investment on flood control, drainage and anti-sea-erosion works was Rs. 639 crores upto 1977-78. The benefits accrued upto this period have been estimated as given below :

(i)	Construction of new embankments	—10,335 km.
(ii)	Construction of drainage channels	—19,250 km.
(iii)	Towns protected	—262 Nos.
(iv)	Villages raised above flood level	—4,700 Nos.

According to the figures supplied by the States, the area afforded reasonable protection is about 10 million hectares upto March, 1978 against the estimate of 34 million hectare area which could be provided with reasonable protection from floods.

The anti-sea-erosion programme was mainly taken up in Kerala due to severe erosion at several places during the monsoon when the sea becomes rough. The length of coastline protected by end of March, 1978 was 190 km. out of a total length of 246 km. which needed immediate protection.

The Rashtriya Barh Ayog was, set up in the year 1976 to evolve a coordinated, integrated and scientific approach to the flood control problem and draw out a national plan fixing priorities which could be implemented in the near future. The Ayog submitted its report in December 1979 to the Government of India.

Over the past few years, the Centre has organised the flood forecasting and warning system under the Central Water Commission in respect of all inter-State rivers as per recommendations of the Minister's Committee on Floods and Flood Relief (1972).

Forestry

K. G. Bhatia and S. K. Bhargava*

FOREST, which was the scene of evolution of man, was originally the only source of food and shelter. As such, man had a very close and direct relationship with it. But with the development of society, man started realising that agricultural and urban development was being obstructed by the forests. This led to the destruction of this valuable natural resource. No doubt, some deforestation was necessary or else we would have continued to live in a primitive form, but in the race of urbanisation, the destruction became indiscrete and it led to a rapid depletion of the forests.

India, with its vast land area under forests also followed the trend and this wanton annihilation was further accelerated under British supremacy. However, the reckless cutting down of forests came to an end when we came to know of the many sad examples of this delibrate course towards self-destruction. Consequently, an approach towards scientific forestry was adopted in 1864 and Forest Policy declared in 1894.

During the interval that elapsed since the declaration of the policy in 1894 and our Independence in 1947, changes of far-reaching importance had taken place in the economic and political life of the country. Therefore, a new National Forest Policy was adopted in 1952, which laid greater emphasis on the conservation of forests and their development, keeping in view the needs of the local population as also of the wood-based industries.

Thus, meeting the requirements of household and industrial timber, protection of wild life flora and fauna, improving the environment, creating gainful employment for 40 million tribal dwellers in the forests as also large section of the rural population have been the moving force in shaping the successive development plans of forestry in India.

Progress in the Decade 1951—60

The First Five Year Plan (1951—56) stressed maximum concern about the rehabilitation of forest areas which had been over-exploited prior to Independence. Man-made forests were raised over an area of about 50,000 hectares. The plantation schemes included species of economic importance and afforestation of degraded areas. The Plan expenditure on forestry was Rs. 8.5 crores which was 0.4 per cent of the total Plan outlay in the public sector.

In the Second Plan (1956—61) also the programme of consolidation of areas in the forests continued. Additionally, construction of forests roads, preparation of forest working plans and creation of plantations of economically important species received more emphasis. Plantation of valuable species was raised over an area of 1.64 lakh hectares and nearly 1.70 lakh hectares of degraded forests were rehabilitated. The expenditure in this sector (Rs. 21.2 crores) in the Second Plan was almost two and a half times that of the First Five Year Plan.

*Senior Research Officer, Planning Commission and Asst. Inspector General of Forests, Union Ministry of Agriculture & Cooperation respectively.

Decade 1961—70

The Third Five Year Plan (1961—66) of forestry was conceived in the back-droup of an accepted yavining gap between the demand and supply of forest products. Accordingly, two new schemes viz. plantation of quick growing species and farm forestry—fuel-wood plantations were launched during the Plan. Thus, four plantation schemes i.e. two launched in the earlier plans and two in the new plan, became operative during the Third Five Year Plan.

A total of 5.83 lakh hectares of land was brought under plantation in the plantation schemes referred to above with an expenditure of Rs. 20.59 crores. Similarly, in the Annual Plans 1966—69, a total area of 4.52 lakh hectares was brought under forest plantations with an expenditure of Rs. 22.5 crores. Among the other schemes undertaken during the plan period were the Pre-investment Survey of Forest Resources and the establishment of Logging Training Centres. The pre-investment survey of forest resources was to investigate and assess surplus forest resources in the potential forest areas of the country and to report upon the economic availability of raw materials for utilisation by various wood-based industries. The Logging Training Centres were to train officers and field staff on logging planning and study with a view to obtain higher timber yields from the forest areas under expoitation.

Decade 1971—80

In the Fourth Plan (1969—74) the plantation programmes received still greater impetus. The physical targets were (i) planting of quick species covering a total area of 2.87 lakh hectares (ii) planning of economically important species like Teak, Semal, Sissoo etc. over an area of 3.39 lakh hectares and (iii) development plantations, over an area of 2 lakh hectares under the scheme of rehabilitation of degraded forests. It was also proposed to take up waste-lands, contiguous to the forests in large blocks of 20 hectares and above for fuelwood plantation. The total outlay on forestry during the Fourth Plan was Rs. 94 crores. However, against the aforesaid target, a total area of 7.14 lakh hectares was planted with an expenditure of Rs. 43.8 crores. The above plantation and other development programmes carried out during the Fourth Five Year Plan helped in achieving the following objectives :

(i) Increase in the productivity of forests.
(ii) Link up of forest development with forest-based industries
(iii) Development forests as support to rural economy.
(iv) Emphasis on medium and long term industrial and agricultural requirements.

Fifth Plan 1974—79

The National Commission on Agriculture made recommendations about taking up large programmes of production, forestry by establishing Forest Development Corporations in the States and Union Territories in waste-lands alongwith planting in the panchayat lands and common village lands under social forestry programmes. Keeping in view the recommendations of the NCA, the two Centrally Sponsored Schemes were launched in the Fifth Five Year Plan under Social Forestry Programme viz. (i) mixed plantations on waste-lands, panchayat lands etc. and (ii) reforestation of degraded forests and raising of shelter-belts. The original Fifth Plan 1974—79 was subsequently

TABLE I

TOTAL PLAN OUTLAYS AND EXPENDITURE IN AGRICULTURE AND ALLIED SECTORS

(Rs. in crores)

Plan period	Total outlay	Total expenditure in Agriculture and allied programmes (including forestry)	Forestry	Agriculture progrmmes excluding forestry	Forestry	Agriculture excluding forestry
					(as percentage of total outlay)	
1	2	3	4	5	6	7
First Plan (1951—56)	1960	206	8 5	197.5	0.4	10.1
Second Plan (1956-61)	4600	276	21.2	254.8	0.5	5.6
Third Plan (1961—66)	8573	725	45.9	679.1	0.5	7.9
Annual Plans (1966—69)	6665	1107	42.0	1065.0	0.6	16.0
Fourth Plan (1969—74)	15912	2320	88.5	2231 5	0.6	14.0
Fifth Plan (1974—79)	39304	4644	205.7	4438 3	0.5	11.3
outlays 1979—80	12601	1816	80.8	1735.2	0.6	13.8

cut short by one year and a new plan was started from 1978-79. The four plantation schemes of the State sector mentioned earlier were continued to be implemented with greater emphasis in the period 1974—79. The social forestry schemes have been implemented since 1976-77. The implementation of the plantation schemes was correlated with social well-being of the people The approved outlay for forestry sector in the Fifth Plan was Rs. 205.7 crores and the outlay for Annual Plan 1979-80 was Rs. 80.8 crores. During the Annual Plan 1978-79 a total area of about 3.2 lakh hectares was planted up under various plantation schemes. Besides, about 17,000 row kilometres (RKM) were planted along the road side, canal banks etc. The targets for 1979-80 and 1980-81 are 3.8 lakh hectares and 25,000 RKM and 4.0 lakh hectares and 35,000 RKM respectively. The target for 1979-80 has been achieved. The plantation schemes have provided enormous opportunities of employment in the rural sector, since about 60 per cent of the cost of planting etc. is utilised on employment of unskilled labourers.

Sixteen Forest Development Corporations have also been set up till now. These will help in the development and utilisation of forests and promotion of forest-based industries by utilising institutional funds. The programmes of economic plantations have been taken up mainly with the aim of meeting the industrial requirements of wood. It is estimated that if forests are worked intensively the maximum yield that can be obtained from national forests could be doubled from the actual production level of about 1.10 crore cubic metres in 1977-78. But still there will be a large gap in the demand and supply by the turn of this century which will have to be met by raising new plantations in much larger areas than what has been done so far. The plantation programme for industrial wood so far has been of the order of about one lakh hectares per year on an average.

So far, the average area planted under farm, forestry, social forestry has been about 1.2 lakh hectares per year. By the end of the Second decade, plantations under farm forestry and fuel wood Plantation schemes have been raised on an area of about 3.2 lakh hectares and under social forestry the plantations are to the extent of two lakh hectares. The fuel wood availability from these plantations may be placed at about 65 lakh tonnes per annum which will raise the total fuel-wood availability from the forests to about 2.65 crore tonnes. But this would still leave a large gap in demand and supply. There is no doubt that an enormous task has to be completed as millions of hectares of land area will have to be planted. Therefore, for the success of the forestry programme as well as for effective protections of our productive forests, forestry should become a people's movement.

It would be worthwhile to examine some of the important results achieved during the Five Year Plans. On perusal of Table 1, it would be seen that the programmes in the forestry sector got a low priority in the allotment of resources for development as compared to agriculture. Even though the total plan outlays have increased about twenty times by the end of the Fifth Five Year Plan, the share of forestry sector continues to remain between 0.4 to 0.6 per cent of

TABLE 2

Net Domestic Production (at current prices)

(Rs. in crores)
(percentages given in brackets).

Sector/year	1960-61	1965-66	1970-71	1975-76	1976-77@	1977-78@	1978-79*
1	2	3	4	5	6	7	8
Agriculture	6580	9534	16354	25868	26692	30359	31023
	(49.3)	(45.8)	(47.4)	(41.8)	(39.8)	(40.4)	(38.6)
Forestry and Logging	174	317	397	722	830	935	1122
	(1.3)	(1.5)	(1.1)	(1.2)	(1.2)	(1.3)	(1.4)
Total (net domestic product at factor cost)	13335	20801	34519	61899	67120	75058	80090
	(100)	(100)	(100)	(100)	(100)	(100)	(100)

@Provisional.

*Net Nation Product at factor cost (at current prices).

—Quick Estimates.

the total Plan outlays, whereas the share of agriculture (excluding forestry) has been varying from 5.6 to 16.0 per cent.

Similarly, from Table 2 it can be seen that the contribution of forestry sector to net domestic product has remained static since 1960-61 between 1.3 per cent and 1.4 per cent. Similarly, even though the total wood production per annum has gone up, per capita production is virtually stationary at a figure of 0.04 cubic metre.

Sixth Five Year Plan (1980—85)

The Planning Commission is currently preparing a new Sixth Five Year Plan 1980—85 reflecting the priorities and policies of the new Government. This would provide us with an opportunity to review the priorities and programmes as envisaged in the earlier Draft Plan 1978—83. In formulating the new Plan it is necessary to ensure a major thrust on increasing goods and services from forestry and other allied activities in order to correct the imbalance existing between the predominant share of crop husbandry in the national income and the relatively poor share of forestry. The main thrust in the forestry sector should be on :

(a) forest conservation and protection, environment improvement afforestation in degraded forests ;

(b) wild life conservations ;

(c) social forestry and farm forestry ;

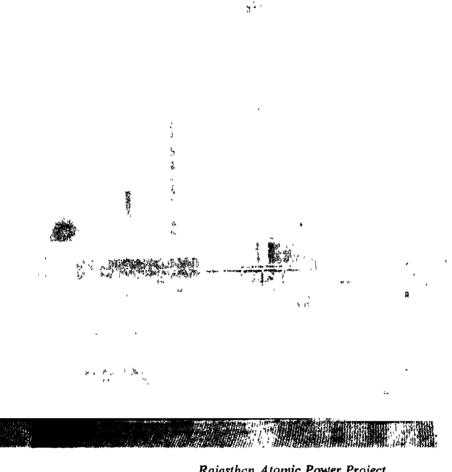
(d) rural employment generation with greater orientation in favour of tribals and scheduled castes and other weaker sections of society so as to give permanent support to their economy through forestry programmes ; and

(e) increasing the productivity of forest products for meeting the increasing industrial and rural needs.

If the above objectives are accepted then it is necessary to consider forestry as a service and a welfare activity rather than a revenue yielding asset which has been followed in the States.

Conclusions

Needless to mention that the efforts in developing forest resources with a view to contribute substantially to the national economy have not succeeded in spite of the various development programmes. This is not because forestry sector has failed us, but their poor performance is due to the low priority in allocation of funds given to the sector as is obvious from the discussion above. There is greater appreciation of the role of forests in the life of the people and the same is expected to receive due priority in the development plans. The deforestation activities which had assumed great proportions have been stopped completely.

Let us not forget that forests have an enormous function in our rapidly expanding economy and it will be our failure if we fail in making forests meet our requirements and in making life happier and healthier for the lot who live in and on the forests. □

Rajasthan Atomic Power Project

Energy

T. Ramachandran

INDIA consumes energy in a variety of forms ranging from nuclear energy to animal dung. While coal, oil and electricity constitute the principal forms of commercial energy, India, like many other developing countries, continues to rely in a substantial measure on non-commercial fuels viz. firewood, cow dung and agricultural wastes. During the last three decades, commercial energy consumption has increased almost fiive-fold measured in terms of coal replacement. The growth of commercial energy consumption in original units as well as in terms of coal replacement is set out in table [1]

Among the three forms of commercial energy, electricity registered the fastest growth rate followed by oil.

Estimates of non-commercial energy consumption are derived primarily from data collected through sample surveys. These compilations indicate that, as a percentage of total energy consumption in the country, the share of non-commercial energy consumption declined from 68 per cent in 1953-54 to 43 per ce in 1975-76.

*Director (Power), Planning Commission.

Growth of Energy Supply Industries

Concerted efforts have been made in the last thi years to tap domestic energy resources. The investme on the energy sector has not only risen in absolu terms but has increased steadily as a percentage total Plan investment. During the period 1974-75 1978-79 investment in energy was more than 25 p cent of the total investment.

Power Development

Power development has made significant strid during the three decades of planning. From a ru mentary stage of isolated stations feeding limited lo areas there had been substantial growth of the pow systems with basic generating stations, transmissi and distribution network etc. with a fairly well inte connected systems in most of the States, and eme gence of regional grids.

Electric power development as a means of promc ing industries and other nation-building activities a improving the standard of living of the masses h been given priority in the economic planning in t country. The share of investment in power develo ment in different plan periods as a proportion total investment has been steadily increasing.

Table I. Consumption of Commercial Energy

(in original unit)

Year	Coal million tonnes	Oil million tonnes	Electricity TWH
1953-54	28.7	3.7	7.6
1960-61	40.4	6.7	16.9
1965-66	51.8	9.9	30.6
1970-71	51.4	15.0	48.7
1975-76	71.0	17.8	66.0
1978-79	68.8	21.7	84.4

Note : (i) Coal consumption excludes coal used for power generation.

(ii) Oil consumption excludes oil used for non-energy purposes, for power generation and in refineries.

(iii) Electricity consumption includes supplies from both utilities and non-utilities and excludes consumption by power station auxiliaries and transmission and distribution losses.

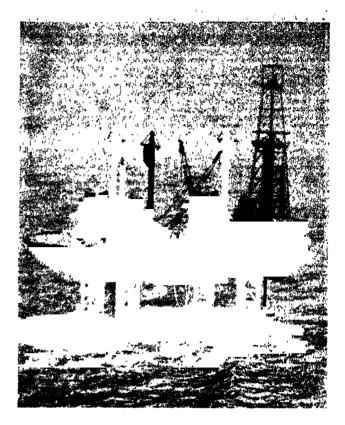
In physical terms the installed generating capacity which was a mere 2.3, million kw in 1950 increased to the impressive level of 31 million kw by March 31, 1980.

In the first two decades the hydel stations contributed about 45 per cent of the total energy generated in power sector and the balance by the thermal stations. Due to lack of fully investigated hydel projects and long gestation period involved in their construction, thermal stations were taken up to meet the last growing demand whose rate of growth far exceeded the economic rate of growth About 10 per cent of the country's total available hydel potential has so far been harnessed for power generation. Nuclear stations have not made as yet any significant impact but a breakthrough in the fast breeder technology would improve its capabilities and proportion.

From the Third Plan onwards the transmission and distribution network in the country have been developed not only for utilisation of generating capacity within each State but also for optimising the utility

Table II Consumption of Commercial Energy

(in million tonnes of coal replacement)

Year	Coal	Oil	Electricity	Total Commercial Energy
1	2	3	4	5
1953-54	28.7	24.1	7.6	60 4
1960-61	40.4	43.9	16.9	101.2
1965-66	51.8	64.6	30.6	147.0
1970-71	51.4	97.2	48.7	197.3
1975-76	71.0	115.7	66.0	252.7
1978-79	68.8	141.1	84.4	294.3

'Sagar Samrat' oil drilling at Bombay High

in the regional level on an integrated basis through inter-connecting lines between the States. 40kV lines have also been established in a few States in the last few years. Centralised load despatch facility and monitoring in the State and regional level would promere integrated operation of the regional grid system.

Table III

(Rs. crores)

Plan Periods	Total Plan Expenditure	Power Sector Expdr	Share of power Sector
1	2	3	4
First Plan (1951-56)	1960	260	13.3
Second Plan (1956-61)	4672	460	9.8
Third Plan (1961-66)	8573	1252	14.6
Three Annual Plans (1966-69)	6756	1223	18.1
Fourth Plan (1969-74)	15779	2932	18.6
Fifth Plan (Revised) (1974-79)	392288*	7293*	18.6
Annual Plan (1979-80)	12550*	2473*	19.7

*Represents outlays.

Rural Electrification

Rural Electrification and providing power for irrigation pumping has been viewed as an adjunct to the food production programme besides providing social benefit to the community. Out of nearly 5.7 lakh villages in the country over 45 per cent have been electrified so far and about 40 lakh pump-sets

Oil drilling at Bakulatala site in West Bengal

Table IV

(million kw)

1	Capacity Added 2	Cumulative capacity 3
As in 1950		2.30
First Plan (1951-56)	1.10	3.40
Second Plan (1956-61)	2.25	5 65
Third Plan (1961-66)	4.52	10.17
3 Annual Plans (1966-69)	4.12	14.29
Fourth Plan (1969-74)	4.17	18.46
Fifth Plan (1974-79)	10.54	29.00
Annual Plan 1979-80	1.81	30.81

energised. Minimum Needs Programme for rural electrification to benefit hilly, tribal and backward areas was taken up from the Fifth Plan period onwards. A Rural Electrification Corporation was set up in the public sector which advances loans to the State Electricity Board on easy terms for electrification of rural areas.

Coal Mining

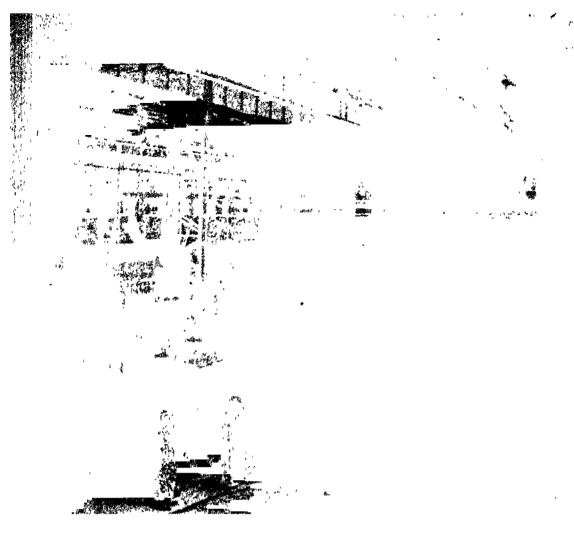
Initiation of economic planning marked the beginning for systematic and scientific development of the coal industry.

With coal mining mostly in the private sector, the First Five Year Plan (1951—56) stressed the need for survey and scientific classification of coal deposits, conservation of coal and research and development in beneficiation carbonisation, etc. of different coals.

With the adoption of the Industrial Policy Resolution (1956) in the Second Five Year Plan (1956—61), the key role for the development of coal for furthering industrial development was recognised, leading to the setting up of a National Coal Development Corporation under the Central public sector. In this Plan, the coal production programmes were extended to different States to avoid transport bottlenecks, and washing of metallurgical coal was considered necessary to supply uniform quality to the steel industry.

The major developments in the Third Five Year Plan (1961—66) included the initiation of works on the construction of deep coking coal mines (Sudamdih and Monidih), and decision to set up for the first time fertiliser plants using coal as feedstock. Steps for the utlisation of washery products (middlings) in power generation were also taken during this period.

In the Fourth Five Year Plan (1969—74 major structural changes were made in the management pattern of the coal industry. The management of the coking and non-coking coal mines under private ownership was taken over by the Central Government in 1971 and 1973 respectively and these were subsequently nationalised in 1972 and 1971. This set the pace for an integrated development of coal mines with introduction of appropriate technology, standardisation of equipment, development of infrastructural facilities and adoption of significant social security and welfare measures for colliery workers. The Fuel Policy Committee set up by the Government submitted a number of recommendation to the government in 1974. The most important recommendation of this Committee was that coal should be recognised

In search of 'black diamond' miners in a coal mine

High Voltage assembly section of Bharat Heavy Electricals Ltd., Bhopal

as the basic and primary source of energy in the country, especially in the context of emerging international oil situation.

Pursuant to the efforts made in the earlier Five Year Plans, significant strides were made in the Fifth Five Year Plan, (1974—78) in reorganisation and reconstruction of mines, opening of a large number of new underground and open cast mines in different regions, with introduction of new technologies consistent with the development plans. Several schemes were also taken up for improving washery capacities, augmenting infrastructural base, promoting welfare activities and safety measure, and enhancing the R & D base in exploration, exploitation and utilisation of coal.

Coal production has made steady strides during thirty years of planning and the production crossed 100 million tonnes mark in 1977, as compared to a level of less than 35 million tonnes in 1951 at the beginning of the planning process. India is now one of the top nine coal producers in the world, and amongst the developing countires, India is by far the largest producer contributing to three per cent of world production. The various measures taken over the period of economic planning replaced the unscientific and irrational methods of mining practiced by the private industry and ensured observance of the prinicples of conservation in the use of coal.

The coal industry has, however, been beset with some problems which have contributed to virtual stagnation in coal production during the last few years such as continued shortage of power in the Bengal Bihar Region, occassional shortages of explosives, large scale absenteeism of labour and strained industrial relations. However, substantial production capacities have been built up and equipment modernised and it should be possible to achieve significant increases in coal production in the coming years

Petroleum

The petroleum industry in India until the early fifties was entirely in foreign hands and confined to a small area in the north-eastern corner of the country. Both the oil production and the refining capacity were extremely small—about 0,25 million tonnes per year—in 1950. Against this, the consumption was a little over three million tonnes and the balance requirement was not by imports. With fast industrialisation after independence demand rose sharply, crossing the five million mark by the mid-fifties, and to meet it, increasing quantities had to be imported. To reduce this dependence on imports it was fell necessary to establish indigenous oil resources, and a augement the refining capacity in the country.

Indigenously built heavy machinery engaged in the task of nation-building

The Oil and Natural Gas Commission (ONGC)—a public undertaking, and Oil India Ltd (OIL)—a joint enterprise, were formed in 1956 and 1959 respectively; the former to carry out a nation wide search for oil while the latter was to conduct intensive exploration and to enhance production in the proven oil-province of Upper Assam Valley.

For augmenting the refining capacity, while allowing foreign oil companies to open three refineries—two at (IRL) in 1959 to set up more refineries in India. This and one at Vishakhapatnam by CALTEX (1957), the Government also formed the Indian Refineries Ltd (IRL) in 1959 to set up more refineries in India. This organisation was later merged with the Indian Oil Corporation Ltd. (IOC).

As such it was during the Second Plan (1956—61) that the Indian Petroleum industry not only made a modest expansion but also started acquiring a national hue. In this period the indigenous oil production made a small but noteworthy increase while the refining capacity rose to 6 mtpa. However, the demand also grew up to 8 mtpa.

Inspired by the successes met by ONGC both in Assam and Gujarat in discovering new oil/gas fields, the subsequent 5-year Plans paid increasing attention, attaching growing importance and providing larger outlays for oil exploration. As a result of the efforts of ONGC and OIL, oil production which stood at a meagre 0.5 million tonnes at the end of the Second Plan, rose to 5.6 million tonnes by the end of the Third Plan (1961—66); 7.9 million tonnes by the end of the Fourth Plan (1969—74); 10.6 million tonnes by the end of the Fifth Plan (1974—78) and may rise upto 14.0 million tonnes by 1980-81. It was during the Fifth Plan that the ONGC made a major breakthrough by discovering the large Bombay High Oil field in the off-shore area. They have since discovered a number of other significant oil and gas fields in the Western Continmental Shelf and one in the Godavari off-shore region on the Eastern Shelf. OIL has also started exploration in Mahanadi Delta off-shore region. Outlays provided for oil exploration in the Second, Third and the Fourth Plans were Rs. 26 crores, Rs. 115 crores and Rs. 193 crores respectively. With a four-fold rise in 1973-74, a greater urgency to establish more oil resources was felt and the outlays for the Fifth and the Draft Sixth Plan (1978—83) were increased significantly to Rs. 1194 crores and Rs. 1833 crores respectively, especially to intensify off-shore exploration and production programmes. With the continued hike in oil prices by OPEC since December, 1978 it would be only logical to expect that oil exploration would get due recognition in the Sixth Plan (1980—85), presently under formulation.

The total refining capacity, at the end of the Second Plan stood at 6 mtpa. By setting up three public sector refineries viz., at Gauhati (1962), Barauni (1964), and Koyali (1965), and expanding the existing refineries, the capacity was raised to 10 mtpa. by the end of the Third Plan. The capacity was further raised to 16 mtpa by expanding the existing refineries and setting up a joint sector refinery at Cochin at the beginning of the Fourth Plan. During the Fourth Plan another joint-secor refinery was set up at Madras and the total capacity was raised to over 20 mtpa ;

very nearly reaching the consumption figure of 23.5 mtpa. To meet the growing demand during the Fifth Plan, another refinery was set up at Haldia in the Public Sector, and the existing Koyali and Barauni refineries were further expanded to achieve a capacity of about 27.5 mtpa by 1977-78 Action to set up two more refineries viz., at Bongaigaon (10 mtpa) and Mathura (6 mtpa), and to expand the Koyali Refinery capacity by another 3 mtpa, were also initiated during the Fifth Plan itself. The 3 million tonne expansion at Koyali has already been completed and the Bongaigaon Refinery is also nearing completion. With the commissioning of Mathura Refinery in 1981, the total refining capacity would reach 35.5 mtpa. With a view to meet the growing demands, schemes for expanding the existing refineries have already been drawn. Besides, the need for setting up new refineries is also being examined.

All the major foreign refining and marketing companies like ESSO, Burmah Shell and CALTEX have already been taken over and the entire marketing operations have been brought under public control.

With the discovery of a number of oil and gas fields, a large quantity of gas has become available. Studies for the most economic utilisation of natural gas have already been carried out and it is being planned to use this gas for manufacture of nitrogenous fertilizers, petrochemicals and liquified petroleum gas.

Prospects

With the oil crisis precipitated by the sharp increase in oil prices in 1973 followed by further periodic increases, the energy problem has assumed serious proportions. For a developing country like India, the depletion in oil supplies and rising energy costs could prove a serious constraint on economic development. In 1977(Planning Commission set up a Working Group on Energy Policy to be followed by the country. The recommendations contained in the report of the Working Group are under examination. Broadly the strategy to be followed would comprise :—

(a) acceleration of exploitation of our domestic coal resources and hydro potential ;

(b) management of the oil demand ;

(c) energy conservation, including improvement in efficiency of energy use;

(d) management of non-commercial sources of energy and their more effective utilisation and

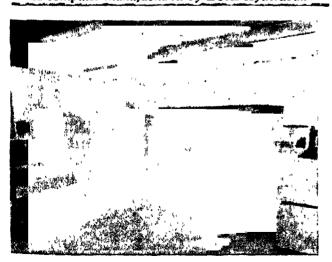
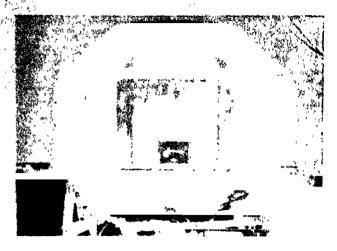
(e) development of new and renewable sources of energy.

Energy consumption is not an objective by itself. But energy is used in practically every sphere of human activity and the process of economic development calls for increasing use of energy. Energy planning has, therefore, to be hand in hand with national economic planning. ☐

Science and Technology

Hira Lal*

SOON after independence Shri Jawahar Lal Nehru declared "........It is science alone that can solve problems of hunger and poverty, of sanitation and illiteracy, of superstition and deadening custom and tradition of vast resources running to waste of a rich country inhabited by starving people". As a consequence there was emphasis on development of indigenous capability in science and technology; it was realised that improvements in the production of goods and services which contributes to the material wealth of the country could be brought about through S & T as an instrument in the coordinated use of the available supplies of skills, capital, land and natural resources. This unflinching faith in science and' scientists resulted in a chain of national laboratories emerging in potential areas of development. Simultaneously a series of institutes of technologies, universities and institutions of higher learning were also established. Three decades ago there were two National Laboratories and 27 Universities. Today there are 900 research institutions including Universities, IITs, National Laboratories etc. The annual expenditure on research and development has gone up from Rs. 5 crores to about Rs. 500 crore. Stock of scientific and technological manpower has been estimated to be of the order of two million and is also growing at the rate of 9 per cent per annum. All this would be indicative of the capabilities built up for S & T thrust to meet the development needs.

A computer manufactured by ECIL Hyderabad

* Senior Research Officer, Planning Commission

India's first Satellite, Aryabhata

Specialised Institutions

Apart from such facilities for research and training, specialized institutions have been built up and strengthened to achieve self-reliance in the high technology areas of atomic energy, space research, electronics, remote sensing, petroleum exploration etc. A chain of institutions for agricultural research together with a number of agricultural universities have been organised which led to independence from food imports in Indian agriculture. Research and development facilities for captive use have come up in several sectors like the railways, defence, tele-communications, heavy industries. In addition Cooperative Research Associations were set up in different sectors of the industry.

With a view to help in the exploration and exploitation of the natural resources potential of the country, several scietific and technological institutions have been raised and strengthened pertaining to mineral resources, forestry resources, water resouces and petroleum. Institutional arrangements have been created for standardization, quality control, testing and analysis as these have considerable significance to industrial progress. Design, engineering and consultancy facilities have come up to meet the needs of the refinery industry, fertilizers, steel and civil construction areas.

Social Policy Resolution

The Scientific Policy Resolution adopted by the Parliament in 1958 is an important milestone in the promotional measures for S&T development and to link it with the process of economic development of significance to the common man. To enable advice to the Government at the national level, scientific Advisory Committee to the Cabinet was constituted and this institutional sructure has been modified in scope and function from time to time : presently we have the National Committee on Science & Technology, creation and dissemination of scietific culture and problems of planning the efforts.

The investments in science and technology have led to considerable gains in diverse fields. The achievements in high technology areas like atomic energy and space together with the benefits of agricultural research and extension are well known. Today the country is

able to sustain the growth of the industries in diverse fields like textiles, food processing, cement, chemicals, metallurgical and engineering industries with domestic production. In several areas the country is also in a position to share its know-how with other countries and also to undertake export of non-traditional goods.

Appropriate Technology

While taking note of the areas of strength and achievements, the problems, constraints and weaknesses would also need attention. The benefits of science and technology have yet to reach in a full measure, the weaker sections of the society as also the lesser developed areas of the country. The concept of appropriate technology is yet to make roots for finding solutions for increased production in the rural areas and for the unemployment. In several emerging fields like the development of new and alternative energy sources, environment oriented development planning with stress on conservation and ecological aspects, applications of technological efforts to exploit the full potential of the ocean resources, etc., it would be essential to adopt multi-disciplinary and multi-institutional approach. Comprehensive all India coordinated programmes would have to be structured, implemented and monitored continuously. Mechanisms available to the user agencies or departments to identify, implement and monitor the schemes of relevance to them have to be strengthened in order to secure more effective utilisation of the scientific and technical capabilities already developed in the country. Centres of research have to be identified and strengthened in emerging areas such as immunology, fertility control etc. The full potential and zeal of the youth, especially those who are highly qualified and emerging from the university system has to be tapped through appropriate schemes. The expertise of national scientific academies and professional bodies of scientists, engineers and technologists could also be gainfully utilized on several development themes of national and regional importance. The role of science and technology for the development of large masses of the people in our country is quite significant and the potential has to be deliberately planned and gainfully utilized. □

Regional Development

Ganga Madhava Rao*

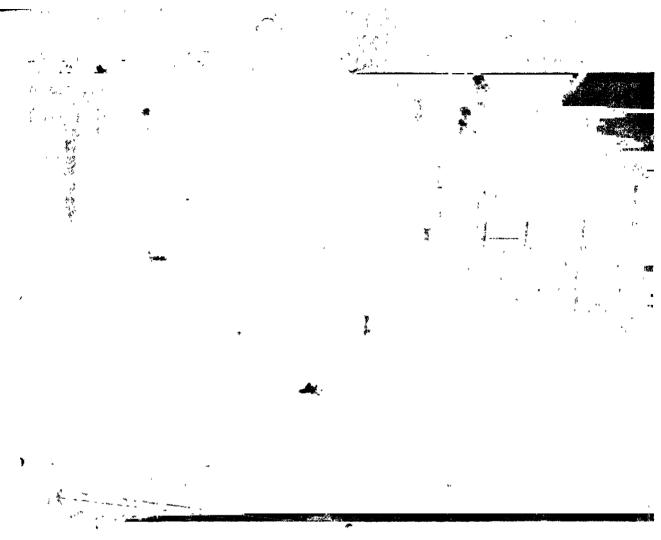
THE PLANNING Commission was set up in March 1950 inter alia for formulating plans for the most effective and balanced utilisation of the country's resources and as such has been concerned with the problem of achieving balanced regional growth from its very inception. Regional imbalances as evident from variations in per capita income, standards of living, percentage of urban to total population, levels of industrial growth, differences in consumption of electricity and gas, and availability of roads and railway transportation facilities and such other indices have greatly emphasised the need for a regional economic policy within the framework of overall economic policy if the fruits of economic and material progress are to be shared among all people and regions. Planning to make a dent in this direction will have to evolve suitable strategies for mitigating these regional variations.

The First Plan recognising the existence of poverty and inequalities of income, wealth and opportunity suggested that elimination of poverty cannot merely result from redistributing the existing wealth. It was necessary to create wealth and simultaneously consider its distributional aspect. Consequently at the initial phase of the First Five Year Plan, no conscious effort was made towards evolving regional plans.

As the First Plan during its implementation had to be adjusted upwards to accommodate programmes for meeting acute unemployment and natural calamities like flood control and drought, the Second Plan made a cautious approach towards meeting the requirements of area development. The Second Plan assumed that the pattern of investment must be so devised as to lead to balanced regional growth. The National Development Council which met to finalise the Second Plan laid down certain broad directives in order to reduce regional disparities. It assigned higher priorities to agriculture, Community Development, irrigation and local works programme which were spread on a wider geographical area and could produce results within the shortest possible time. Provision of facilities such as power, water supply, transport and communications and training facilities in areas which were lagging behind industrially were also augmented. To implement this policy rural industrialisation and establishment of industrial estates were advocated. Location of new enterprises whether public or private were to be considered in relation to the requirements of the less developed regions particularly when location was not determined by availability of raw materials or other natural resources. The National Development Council also directed to promote greater labour mobility between the different parts of the country.

Regional Disparities

A well-defined approach towards reducing regional disparities was however devised only in the Third Plan by giving positive directions for tackling the spatia

*Research Officer, Planning Commission.

Noonmati Oil Refinery at Gauhati

problems. These directions included selection of industrial projects based on the needs of the areas which have the necessary potential for industrial development. To illustrate this approach the expansion of Rourkela Steel Plant and fertilizer factory in Orissa ; Nunmati Oil refinery, fertiliser plant; use and distribution of natural gas in Assam ; phyto-chemical plant, expansion in fertilizer capacity and construction of a shipyard in Kerala and some other projects were cited as examples. Second, every major project should be regarded as a nucleus for integrated development of the region as a whole. For example, around the new irrigation projects, a whole group of schemes aiming at the development of improved agriculture, horticulture, market centres and processing and other industries could be taken up. Similarly, steel plants and other large industrial projects provided the basis for the development of small and medium industries and programmes of education and training and other activities. It was mentioned that such possibilities existed in all large regions in which new resources could be developed. Examples in this regard were given as Dandakaranya, the Rajasthan Canal Area and the regions served by Chambal and several other projects. Third, potential of different regions needed to be studied in relation to the possibilities which arose from advances in technology and science. For example, the handicaps of certain regions such as Assam, Gujarat, Rajasthan arising primarily from the lack of coal deposits could be substantially reduced by making available hydel power, oil and atomic energy. Besides these, the Third Plan also emphasised the importance of the programmes with regard to education and training, labour mobility and personnel for development in reducing regional variations as these cannot be eliminated by merely making available resources to underdeveloped regions.

The Fourth Plan began a new dimension to the creation of regional balance. It assumed that the differences in developmental activities between states as well as between regions arose due to variations in mobilisation of financial resources. Consequently emphasis was laid on getting more resources for investment in handicapped and backward regions. Financial institutions like the Reserve Bank of India, the Agricultural Finance Corporation, the Life Insurance Corporation, etc. were required to contribute substantially for the purpose. It was recognised that the centre could assist in correcting regional imbalance by allocating a portion of central assistance to this end, by directing location of central projects in such a way that it reduced the gap and by adjustments in procedures and policies of national financialu and other institutions. The new Gadgil formula for the allocation of central assistance to the states set aside 10 per cent for states with per capital income less than the

national average, and 10 per cent for special problem states. The policy of locating large central projects in backward states and areas was accepted. It was also suggested that within the state development planning should satisfy the primary needs of each region or area. The Fourth Plan mentioned that an important aim of industrial development would be to meet local demand through local processing and utilisation of locally available material. The diffusion of industrial activity was also expected to be facilitated by the rural electrification programme on which large outlays were being proposed.

During this period an important step taken was to identify the specific areas where intensive development activities could be carried out. The Committee meeting of the National Development Council held on September 13, 1968 decided to set up two working groups to make a careful study of the questions relating to regional imbalance; one of which dealt with identification of backward areas, and the other with fiscal and financial incentives. The former was set up under the chairmanship of Shri B. D. Pande, the then Secretary of the Planning Commission and the latter under Shri N. N. Wanchoo, the then Secretary of the Ministry of Industrial Development and Company Affairs. The reports of the groups were available in early 1969 on the basis of which 246 Backward Districts were identified for concessional financial assistance and 101 districts/areas for Central Scheme of Investment Subsidy.

The scheme of concessional finance announced in mid 1970 envisaged financial assistance from term lending institutions like IDBI, IFCI and ICICI on lower rates of interest, lower promoters, contribution, initial moratorium for a period extending upto 5 years, longer amortisation of 15—20 years, reduced commitment charge of 1/2 per cent, risk participation on selected basis and lower under-writing concession/commitment charges. Under the Central Improvement Subsidy Scheme announced in August 1971, 10 per cent subsidy was granted by the Central Government on fixed capital investment of new and existing units in identified backward districts/areas. From March 1973 the rate of subsidy was increased to 15 per cent of fixed capital investment subject to a ceiling of Rs. 15 lakhs. Under the Central scheme of Transport Subsidy initiated in July 1971, the Government of India provided subsidies equivalent to 50 per cent of the transport cost of industrial raw materials and finished products between the location of new and existing units undertaking, substantial expansion in certain remote areas and specified rail-heads. Initially, the scheme was applicable to the industrial units in Jammu and Kashmir region, certain hill areas of Uttar Pradesh and to North Eastern Region, but subsequently it has been extended to Andaman and Nicobar Islands, Lakshadweep and Sikkim.

Since the beginning of these schemes various states and organisations have been representing against the identification of backward districts/areas as well as against the modality of their operation. Many state governments have gone to the extent of formulating their own programmes of investment subsidy. As a result of these, the basic objective of providing differential financial assistance for overcoming initial handicap has been considerably watered down. These schemes were originally intended for a period of five years, but are currently extended on year to year basi which has also weakened their long-term incentive For these reasons it was felt that these problems coul be evolved. With this aim in view, the Planning Commission set up in 1978, a National Committee on Development of Backward Areas under the Chairmanship of B. Sivaraman. The Committee was expected to submit its report by June 1980 but its term is extended upto December 1980. Unless the report of th Committee is finalised, it would be premature to comment on its usefulness.

While reviewing the various stages through whicl the developmental efforts for correcting regional imbalance have proceeded, one discovers certain interesting implications. In this connection, it is importan to note as the author of "India's eveDlopment Experience" has done by indicating that both the growtl in different sectors as well as in different regions withi the national economy impinge on national growtl rates. But only recently, specially after 1968, th national planning has begun giving specific attentio to the development of different regions within th national economy. It was of course preceded by a nev studies undertaken in connection with certain specia problem regions. In this regard, mention may be mad of the efforts of the Joint Study Team organised t investigate conditions in four densely populated districts in eastern parts of Uttar Pradesh (1962—64) and the work of Joint Centre-State study team in th tribal districts in the hill areas of Assam in 1966 Secondly, there is considerable difference betwee regional development as a by-product of efforts t achieve economic growth for the country as a whol and the development of individual regions seen as a essential but by no means exclusive means for promoting national development. During the early phas of Indian planning, considerable hope was laid on th first assumption but the shortcoming of this approac has drawn attention to the latter. As a result of thi change in emphasis, it would be a natural corollary to readapt the various priorities in our plan programmes and allocation of financial resources. The patter of industrial development prior to independence ha already added to the regional imbalance, which wa further accentuated by three additional contributor factors. The first of these is represented by plans c development. Whatever their scope and priorities th importance of these plans could not but have differer impact on different areas. The second is the large ir crease in population over the past few decades. Th incidence of population growth on the well-being c the people in different regions has been necessarily ur equal. The third source of regional inequalities refe to the influence of administrative and political facto which is very difficult to assess. The reorganisation c state boundaries in 1956 in central and southern Indi and a decade later in the north introduced varyin periods of uncertainty and adjustment. The recer spate of division of districts in smaller units also hav contributed to similar uncertainties and weaknesse These are some of the problems which necessaril arise during the course of social, economic and polit cal evolution of a nation but their repercussions o regional imbalance have to be watched carefully an corrective measures applied in time. During the cours of these changes, the appreciation of the problems re lating to balanced regional development alters whic necessarily modifies our strategy to tackle them. □

Foreign Exchange

K. S. Mehra*

THE First Five Year Plan which entailed a total outlay of Rs. 3,360 crores during the period 1951—56 was directed mainly towards increasing agricultural production, irrigation, power and transport. In the field of industry, the stress was mainly on utilisation of existing capacity more fully ; public sector investment in industry and mining was only a small proportion of the total. The direct foreign exchange component of the First Plan was Rs. 400 crores. In 1951-52, the first year of the Plan, there was a balance of payments deficit of Rs. 234 crores but the situation improved substantially in the subsequent years because of the increase in agricultural as well as industrial production The deficit in the balance of payments over the Plan period as a whole was Rs. 318 crores. Of this, Rs. 196 crores was financed by external assistance and Rs. 122 crores by a draft on foreign exchange reserves.

Second Plan

The investment during Second Five Year Plan was of the order of Rs. 6,831 crores in public and private sectors of the economy Due to great emphasis on industrialisation and the development of infrastructure facilities in the field of power and transport and communications the requirements of imports were quite high.

The external balance came under pressure soon after the Second Plan commenced and the foreign exchange reserves declined by Rs. 481 crores within a period of two years. The reason for this large drawal of foreign exchange reserves was an abnormal increase in imports Though the rise in imports is itself attributable mainly to the attempt to carry out the Second Five Year Plan, the shortage had to some extent been aggravated and hastened by the following factors : (1) The heavy demands of defence. (2) The need to import more foodgrains than was originally anticipated. (3) The increased requirements of raw materials, components, spares, replacements, etc. for matching the higher levels of industrial production reached in 1955 and 1956 for which some allowance was made in the Plan estimates but proved to be inadequate. (4) Rather higher imports of con umer goods in the years 1955-56 and 1956-57 compared with earlier years; and (5) Increase in prices and in freight rates.

Therefore, a re-appraisal of the economic situation in 1958 led to the decision to scale down the plan somewhat and to concentrate on "core" projects. The total external assistance utilised during the Second Plan turned out to be more than 50 per cent over the level that was originally envisaged. The drawing down of foreign exchange reserves amounted to Rs. 600 crores, as compared to the Plan estimate of Rs. 200 crores.

*Senior Research Officer, Planning Commission.

Third Plan

The total investment envisaged in the Third Plan was reckoned at Rs. 10400 crores and its direct foreign exchange requirements were estimated at Rs. 2030 crores.

The balance of payment position during Third Plan period turned out to be satisfactory. Firstly, the performance of exports was an encouraging one ; the level of exports of Rs. 806 crores by the end of Third Plan period—i.e., 1965-66, was 4.1 per cent higher compared to the level of exports of Rs. 660 crores in 1960-61. Also there was a sufficient change in the commodity composition and directional exports during the Third Plan. The share of the three principal traditional commodities—tea, cotton textiles and jute manufacture—in total exports declined from 48 per cent to 44 per cent. Also there was a substantial growth in a number of exports to East European countries, especially the U.S.S.R. and also iron and steel, handicrafts and engineering goods. Moreover, several new export products, particularly in the engineering and electrical fields, emerged for the first time.

This dynamism in India's exports during Third Plan is attributable to the increase in production base, both agricultural and industrial and the generally favourable climate of international trade. In addition to these, a significant role was played by institutional, fiscal and other measures, adopted as part of a definite and conscious policy to promote exports. Also in order to bring domestic prices in line with external prices, to restore and enhance the competitive power of exports, the par value of the rupee was reduced by 36.5 per cent on June 6, 1966.

As regard imports, during the Third Plan period, there was a sustained rise in the level of imports except in the first year when imports fell by Rs. 33 crores to Rs. 1107 crores. Imports rose progressively during the next four years and, over the Third Plan period as a whole, imports averaged Rs. 1245 crores a year. The major increase in imports were in cereal and cereal preparations, fertilizers, machinery, spares and components, mineral fuels etc.

External aid played a larger role in the Indian economy during the Third Plan than during the preceding five years. External assistance utilised during the Third Plan amounted to Rs. 4531 crores compared to Rs. 2253 crores during the Second Plan period. It may be noted that this step-up was inspite of the impressive performance of exports during the Third Plan.

Annual Plan

The Annual Plan for 1966-67, though formulated in advance of the Draft outline for the original Fourth Plan (1966—71) took into account the strains then existing in the economy, arising from unforeseen events of the Third Plan period. At the same time, the Annual Plan was framed against a proper perspective of the future for the fifteen-year period commencing with the Third Plan. The total Plan outlay in the public sector for 1966-67 was envisaged at Rs. 2081 crores.

In actual fact India's balance of payments came under severe strain in 1966-67, when the current account deficit jumped to Rs. 958 crores as against Rs. 639 crores during the preceding year.

In the Annual Plan for 1967-68, the outlay on public sector amounted to Rs. 2242 crores showing a modest rise of about 5 per cent against the actual plan

outlay of Rs. 2137 crores in 1966-67. There was an overall improvement in the balance of payments in 1967-68. This improvement was on account of a substantial decline in imports, a modest increase in exports and an improvement in aid utilisation.

The Annual plan for 1968-69 anticipated a total public sector outlay of Rs. 2337 crores against a plan outlay of Rs. 2242 crores in 1977-78. The plan was prepared to secure a feasible rate of growth without generating inflationary pressures. Improvement in balance of payments witnessed during 1967-68 also continued in the year 1968-69 primarily due to a striking growth in exports.

Fourth Plan

The Fourth Plan (1969—74) provided for a total outlay of Rs. 24.882 crores—Rs. 15,902 crores in respect of the public sector plan and Rs. 8980 crores for the private sector. It aimed at reducing foreign aid by about a half compared to 1968-69 level.

The Fourth Plan was designed to serve the objective of growth with stablity and promote progress towards self-reliance. The share of domestic budgetary sources in total resources for the public sector plan was raised to about 78 per cent as compared to 59 per cent in the Third Plan and 54 per cent in the three Annual Plans. External assistance (net of loan repayments but without allowing for interest payments) for the public sector plan was expected to go down from 28 per cent in the Third Plan and 36 per cent in the three Annual Plans to nearly 17 per cent of the total resources in the Fourth Plan.

In actual fact the balance of payments position during the Fourth Plan period turned out to be satisfactory. Import payments in 1973-74 amounted to Rs. 2729 crores and export earnings at Rs. 2351 crores, resulting in trade deficit of Rs. 379 crores. Net invisibles resulted in the outflow of Rs. 76 crores. Gross aid utilisation in this year was Rs. 999 crores. Foreign Exchange reserves increased to Rs. 581 crores by 1973-74 compared to Rs. 394 crores in 1968-69. Another notable feature of the Fourth Plan was the phenomenal increase in export earnings. Also it witnessed a diversification in the commodity structure of exports when non-traditional exports like handicrafts, readymade clothing and engineering goods showed substantial increases.

Fifth Plan

Prior to the finalization the Fifth Five Year Plan in the middle of 1974-75 an anti-inflationary programme was introduced which resulted in curbing inflation. The revised Fifth Plan (1974—79) envisaged an outlay of 39303 crores. An important feature of the Five Year Plan was a special reference to the 20-Point Economic Programme which was announced by the Prime Minister, Smt. Indira Gandhi on 1st July 1975. The programme called for positive action on a broad front. It was not designed as a substitute to the normal planning process; it only supplemented the Plan by emphasizing immediate attention.

As regards the foreign exchange resources the Fifth Plan estimated export earnings at Rs. 21722 crores. Imports during the Fifth Plan were postulated at Rs. 28524 crores. The total external assistance for the Fifth Plan period was envisaged at Rs. 5834 crores. In addition, it was expected that further foreign exchange resources could be drawn to the extent of Rs. 600 crores by way of borrowings from the Reserve ank of India.

A notable feature of the balance of payments position during the first two years of the Plan was the sustained increase in export earnings—Rs. 5374 crores in 1977-78 compared to Rs. 2523 crores in 1973-74. Principal increases in export earnings were registered in respect of engineering goods, handicrafts and readymade clothing.

In regard to imports, payments increased sharply to 6026 crores in 1977-78 compared to Rs. 2955 crores in 1973-74. This was due to increased import bill for petroleum and petroleum products, edible and vegetable oils, machinery fertilizers etc.

Another important feature of the external front of the economy during these years was the substantial increase in foreign exchange reserves which increased from Rs. 591 crores in 1973-74 to Rs. 4500 crores in 1977-78 and further to Rs. 5082 crores in 1978-79. This increase in reserves was due to, among other factors, a large increase in foreign exchange remittances from Indians residing abroad as a result of various concessions and inducements offered by the Government during the previous four years.

Subsequently with the change of government at the Centre in March 1977 it was decided to terminate the Five Year Plan a year ahead of schdule and to have a new Five Year Plan for the period 1978—83. Accordingly a draft five year plan for 1978—83 was formulated involving a total public sector outlay of Rs. 69380 crores. Subsequently, the Planning Commission prepared Annual Plans for 1978-79 and 1979-80. The Annual Plan for 1978-79 provided a public sector outlay of Rs. 11,650 crores. Net external assistance was visualized at Rs. 793 crores. Net external assistance was visulalized at Rs. 793 crores in 1978-79 and Rs. 1086 crores during 1979-80.

It may be noted in this connection that an important objective of the Five Year Plans has been attainment of self-reliance and India has made a great headway in this direction. Indigenous capacity has been built up to the point where except for certain industrial raw materials and sophisticated items of machinery, there are very few areas in which imports are necessary for maintaining the growth of the economy. Since 1950-51, India has received a large quantum of aid from friendly countries and international institutions. Though the gross aid has been going up in each of the subsequent Plan periods, the amount of net aid (net of repayments and interest payments) has been going down since 1966-67). Thus inflow has gone clown from Rs. 860 crores in 1966-67 to an estimated level of Rs. 469 crores in 1977-78 and further to Rs. 384 crores in 1978-79. The ratio of net aid to public sector outlay was as large as 45 per cent in the Second Plan and 57 per cent in the Third Plan, 34 per cent in the Annual Plan 1966—69 but declined to 10 and 11 per cent in the Fourth and Fifth Plans.

Following the elections to Lok Sabha and with change of government, the Planning Commission has recently been reconstituted and a fresh Sixth Five Year Plan for the period 1980—85 is under preparation. The Five Year Plan will aim at an average annual rate of growth of 5 per cent. □

Integral Coach Factory, Perambur

An appraisal of
Public Sector Projects

Mridula Krishna*

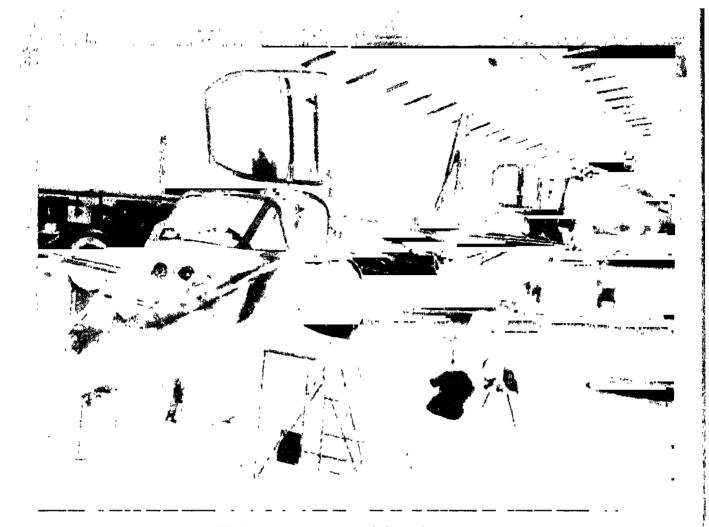
THE systematic project planning for public sector projects in India commenced after two decades of launching of the First Five Year Plan in 1950-51. It was in July 1971 the Planning Commission recognised the need for establishment of a competent evaluation agency to carry out the ex-ante appraisal of projects on comparable basis and that the concept should be worked out on operational and organisational terms. It was then felt that the investment decisions of public sector projects were being taken without proper scrutiny and viability analysis. This led to alarming time over-runs and cost over-runs of the approved projects Inter se priority of projects within each sector was not being decided on the comparable economic and social profitability analysis. The Government therefore decided to set up the Project Appraisal Division in the Planning Commission in 1972 with the following main functions :

(a) to suggest the standard format for submission of projects and procedure for techno-economic calculations ;

(b) to conduct the actual techno-economic evaluation on the strength of social cost-benefit analysis of selected major projects

(c) to assist the State Governments and Central Ministries in giving effect to standardised format and procedure for project evaluation ; and

(d) to undertake and support research leading to progressive refinement of methodology and procedure of project evaluation.

*Director, Project Appraisal Division, Planning Commission

Hindustan Aeronautics Ltd. Bangalore

The decision to set up the Project Appraisal Division in the Planning Commission was in appreciation of the fact that the Planning Commission would use long term sectoral perspectives not only to derive a broad sense of direction but also for enabling the Ministries to generate a large shelf of projects. Once these project reports become available it would be possible to exercise greater choice in the selection of projects and programmes which eventually get included in the Plan.

It was also felt by the Government that there was no machinery in the Government at a single point which could advise the best invest decisions between several choices. The Government of India therefore set up in 1972 a special committee of secretaries and named it as Public Investment Board (PIB) for scrutinising public sector investment projects involving an investment cost of Rs. 1 crore and above. The limit has now been raised to Rs. 5 crores. The PIB consisted of Secretaries of Ministries of Finance, Planning, Industrial Development, Prime Minister's Office and the administrative ministry concerned with the investment proposal. The Secretary (Expenditure), Ministry of Finance, acts as the Chairman of the Board The Board takes the note of the PAD into consideration before sending its recommendations on any project to the Cabinet.

The Project Appraisal Division carries out its own appraisal of all projects which go to Public Investment Board or Expenditure Finance Committee for consideration irrespective of whether they are cost estimates (more than 20 per cent) of approved projects. The appraisal notes mainly comment on assumptions made by the Project Authority relating to (a) gestation period, (b) location, (c) life of the project, (d) choice of technology and technical feasibility, (e) capital cost and norms as well as phasing of capital cost, (f) operating cost and norms as well as likely availability of assumed infrastructure facilities in time and required quantity/volumes, and (g) realisation of income and benefits, etc.

A social cost-benefit analysis of the investment proposals is also included in the note.

The Project Appraisal Division by now have appraised about 700 investment proposals for consideration by the PIB. Besides, it has published the "Guidelines for the Preparation of Feasibility Reports for Industrial Projects". This publication provides the required guidance to the public sector undertakings in preparing feasibility reports which can enable the appraisal agencies to carry out the financial, technical, commercial and economic analyses of the investment proposals. The Project Appraisal Division has already prepared the sectoral studies and draft guidelines for preparing feasibility reports of about 20 sectors. These draft guidelines, after discussions with the concerned administrative ministries, Finance Ministry and other Departments/organisations, will be published and circulated. □

Employment

D. K. Makvana*

WHILE formulating the different Five Year Plans, problems of unemployment and utilisation of human resources have been receiving attention. The concern to provide full employment is evident from the fact that the Directive Principles of the Constitution include "the right to adequate means of livelihood."

When the First Five Year Plan was launched in 1951, the main objective of the Plan was aimed at correcting disequilibrium in the economy caused by the wars and partition of the country and to attain self-sufficiency in foodgrains supply. Enough attention was, however, given to the creation of employment opportunities. A number of institutions for promoting labour intensive industries were set up. For example, the Khadi and Village Industries Board, the Handloom Board, the Handicrafts Board, Small Scale Industries Board and the National Small Industries Corporation were established. By the middle of the First Plan, the problem of unemployment was felt more severe. Hence the investment outlay was increased by Rs. 300 crores in 1953 to tackle the problem of unemployment.

The expansion of employment opportunities was one of the principle objectives during the Second Plan period. The Plan gave due regard to the choice of technology and there was a substantial step up of investment for the expansion of the village and small scale industries.

The Third Plan also emphasised the need for enlarging employment opportunities. The principle aim of the Third Plan was to utilise to the fullest extent possible the manpower resources of the country and to ensure a substantial expansion in employment opportunities. The Plan emphasised the need for promoting labour intensive technique of production to the fullest extent so long as it does not lead to smaller aggregated production in the country. The Fourth Plan taken up in 1969 emphasised that it would create more employment opportunities in the rural and urban sectors on an increasing scale In the rural sector, it was designed to achieve this objective through labour intensive schemes During this plan period, a number of special employment schemes were undertaken on a national scale.

Three-pronged Strategy

The Fifth Plan attempted a three-pronged strategy to generate more employment opportunities The first emphasised the need for implementing a programme using the strategic factor employed in the plan such as irrigation and agricultural extension involving the use of high yielding varieties, the second related to the fact that aspects of rural employment generation should be intervowen with a local development strategy and the third, the most important aspect related to the creation of a secure rural tenancy and a productive small farmer base by means of tenancy reforms.

*Dy. Adviser, L.E.&M Division, Planning Commission.

In the Plan prepared for the period 1978-83, one of the objectives was to eradicate unemployment within a period of ten years.

To tackle the problem of unemployment several special employment programmes and beneficiaries-oriented schemes have been experimented from time to time. The Crash Scheme for Rural Employment, Pilot Intensive Rural Employment Project, the Small Farmers' Development Agencies and the MFAL Schemes, the Half-a-Million Jobs Programmes for Educated Unemployed, the Food for Work Programmes, the National Scheme of Training Rural Youth for self-employment, employment programmes, such as, Employment Guarantee Scheme of Maharashtra and Employment Affirmation Scheme of Karnataka, Programme for Educated Unemployed implemented in the course of the plan periods are a reflection of the special attention which the Government has been paying, to the problem of unemployment.

Impact of Programmes

It is, however, not possible to quantify the impact of the investment in different plans as also of the employment programmes on the employment situation in the country. One of the main reasons for this has been the absence, till recently, of comparable and reliable information on employment and unemployment. The pattern of unemployment and under-employment in a vast country like ours with diversified socio-economic and agro-climatic conditions is a complex phenomenon and is not easily amenable to measurement. A clear perspective of the seasonable variation in this pattern reckoned by the rural and urban sectors and male and female population is an essential pre-requisite for formulating policies for tackling the unemployment problem. The Planning Commission was handicapped in this sphere till the Fifth Plan mainly because it required considerable field experimentation before a set of concepts and definitions could be evolved.

In the past, the Planning Commission used to present estimates of the back-log of the unemployment at the beginning of the Plan, of the estimated increase in the labour force during the plan period and of additional employment likely to be created through implementation of the Plan as formulated. In view of the considerable divergence of opinion regarding the appropriate definitions and suitable yardsticks for measuring unemployment and under-employment in rural and urban areas and in view of the widely different magnitudes of unemployment worked out on the basis of various resources, such as, the census, the National Sample Survey and the Employment Exchange data, it was felt that the various aspects needed a closer scrutiny. Accordingly, the Planning Commission set up in 1968, a Committee of Experts on Unemployment Estimates to enquire into estimates of unemployment worked out for the previous plans and the data and methodology used in arriving at them and to advise the Planning Commission on the various connected issues.

In the opinion of the Committee, data available to the Planning Commission for estimating unemployment and under-employment in the past have not been adequate and that the conclusion based on them were

:refore unavoidably subject to an unknown margin error.

Following the broad framework suggested by the aforementioned committee for future surveys on the subject, the NSSO in the 27th round (1972-73) undertook a comprehensive survey on employment and unemployment of the country. On the basis of the results of the National Sample Survey (27th Round 1972-73), the Labour Force in 1973 has been estimated at about 240 million persons, consisting of 236 millions usually employed and about 4 million usually unemployed. The NSSO is committed as at present to the programme of quinquinnial surveys on employment and unemployment and accordingly the latest available information refers to 1977-78. As per this information during 1977-78, the average magnitude of daily status of unemployment in the age-group 15-59 years was about 16.9 millions of which 12.8 millions were in the rural sector.

Manpower Planning

The country has also developed a system of monitoring Employment Market Information in respect of the organised sector covering all public sector establishments and non-agricultural private enterprises employing 25 or more workers on a compulsory basis and non-agricultural private establishments employing 10 to 24 persons on a voluntary basis. The Employment Market Information shows that the employment in the organised sector has risen from 15.5 millions as on 31st March, 1966 to 22.2 millions as on 31st March, 1979. Notwithstanding this growth of employment in the organised sector, the percentage of work force in the agricultural and other informal activities has been rather sticky of 73 to 74 per cent during 1951—1971.

One of the requirements for tackling the problem of unemployment is manpower planning on a scientific basis. The Directorate of Manpower in the Ministry of Home Affairs was set up in 1956 to coordinate, facilitate and assist in the proper implementation of manpower policies by the Ministries and the Agencies concerned and maintaining laison and provide guidance to similar manpower machinery in the States. In 1973, the Directorate of Manpower was shifted to the Planning Commission.

The Government of India also set up the Institute of Applied Manpower Research with the specific objectives of conducting specialised manpower research and studies, providing manpower research services to Government Departments, Public Corporations and Private establishments and providing advanced training for manpower planning.

Manpower Planning has been motivated in States also by the Planning Commission; the Commission came forward in helping the States in setting up or strengthening the manpower organisations by providing two-thirds assistance, as a result of this manpower cells are now existing in almost all the States.

One of the aims of the manpower planning is to place job-seekers in employment in accordance with their educational qualifications, training and experience. Employment Exchanges are functioning in the country for this purpose. There were 546 Employment Exchanges at the end of 1979 as against 126 at the end of 1961. Special attention is given to the scheduled castes, scheduled tribes, ex-servicemen and physically handicapped persons. Special Employment Exchanges have been established for physically handicapped persons to provide them employment assistance. Vocational rehabilitation centres have also been set up with a view to imparting training and providing rehabilitation facilities to the physically handicapped persons. In order to provide necessary guidance and prepare scheduled castes and scheduled tribes candidates for interview and written test, coaching-cum-guidance centres have been established.

Shortage of Skilled Manpower

Shortages have been experienced by the Employment Exchanges in respect of certain skilled categories. To ensure regular supply of skilled manpower at different levels a number of training schemes are conducted by the Directorate General of Employment and Training in the Ministry of Labour. One of the action points of 20-Point Programme relates to apprenticeship scheme to enlarge employment and training, specially of weaker sections. The objectives of skill development have been pursued through the network of industrial training institutes, the apprenticeship training programme and advanced specialised institutes set up for the higher level techniques. A statutory apprenticeship scheme was started in 1962 to impart basic training followed by on the job or shop floor training; 217 industries have been specified to train apprentices in 131 trades in Apprentices Act 1961. At the end of March 1980, 1.7 lakh apprentices were undergoing training. The training of graduates and engineering diploma holders was also brought under the purview of Act in 1975. Steps are being taken to improve the quality of training and promotion of self-employment of the trained craftsmen and to facilitate absorption of trained apprentices in various establishments. Further, modernisation and upgrading of training have been initiated besides, the advance vocational training programme for women.

20-Point Programme

The 20-Point Programme also refers to abolition of bonded labour. The problem of rehabilitation of bonded labour has also received attention of the Government Since the abolition of this system through a statutory measure in 1975 the problems of identification and rehabilitation of this category of labour have been pursued. In 1978-79 a Centrally Sponsored Scheme was included in the Plan to provide for matching grants/assistance to the State Governments in implementing these measures. Out of about 1.2 lakh bonded labourers so far identified, about 90,000 have been rehabilitated.

The Government has been deeply concerned with the welfare of the working classes. Over the different plan periods, rapid strides have been made for implementation of different social security measures for the benefit of working classes. Important among these are the Employees Insurance Scheme, Maternity Benefits, Employees Provident Fund Scheme, payment of Statutory Bonus. Increased Coverage under the Minimum Wages Act and Payment of Gratuity. Other welfare measures relate to equal wage for equal work for men and women workers, welfare activities including housing facilities and education relating to mine workers through specially constituted funds for the purpose. □

Social Welfare

M. K. Widge*

DURING the successive Five Year Plans, social welfare programmes were designed mainly with the objective of providing assistance to individuals or groups, who, on account of certain economic, social, physical or mental handicaps, could not take full advantage of amenities and services provided or the community in general.

A view of urban houses

Social Welfare programmes in India took shape in stages in the course of five year plans. In the First Plan, major responsibility for social welfare programmes was placed on the voluntary sector when the Government of India came forward to assist voluntary organisations with necessary financial and technical guidance in 1953. The latter also started Welfare Extension Projects in rural areas for providing welfare services to children and women.

In the Second Five Year Plan, the Board's activities were expanded to include programmes like Welfare Extension Projects (urban), condensed courses of education, socio-economic programme, holiday homes etc. The Central and State Governments also stepped in to share the responsibility of implementing the welfare programmes. For tackling the problem of juvenile delinquency, beggary, vagrancy and immoral traffic in girls and women, the Central Government sponsored various 'Social Defence' programmes and the State Governments were encouraged to implement the same with necessary financial support. Special programmes were also undertaken for the education, training and rehabilitation of the physically handicapped with the aim of giving them an opportunity to live with self-respect and become useful citizens.

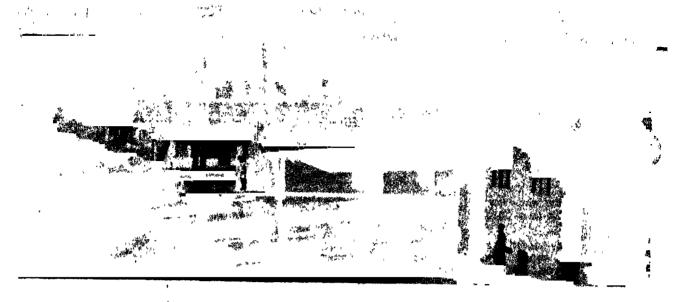
An adult education class

Since welfare programmes in the first two plans mostly emanated from the Centre, an attempt was made during the Third Five Year Plan to draw them up in consultation with the State Governments and voluntary organisations. While the objectives of the Third Plan were comparatively the same as those that preceded it, emphasis was laid on consolidating and coordinating the existing services. A special feature of this period was the special provision of Rs. 3 crore made for child welfare programmes at the Centre with a view to provide children upto the age of 16 years with opportunities to grow into healthy and useful citizens through well planned and integrated programmes.

In 1966—69, attention was primarily focussed on the task of consolidation of programmes started earlier. An important step taken in 1967 was the introduction of a composite scheme 'Family' and Child Welfare Projects' in rural areas

Family and Child Welfare

This sector received a step up in the Fourth Five Year Plan, both financially and physically. In order that the programmes whether financed by the Central Government or State Governments do not suffer a set back, it was felt necessary that the established level of maintenance expenditure on these services be treated

*Research Officer, Planning Commission.

A view of rural houses

as committed expenditure and incorporated in the non-plan part of the appropriate budget. The major programmes continued to make progress during this period was the 'Family and Child Welfare' projects. While formulating programmes for children, priority was given to schemes benefiting destitute children The grants-in-aid programme of the Central Social Welfare Board was utilised to a larger extent than in the past. The 'Social Defence' programmes were completely transferred to the States for implementation and the Centre continued to give guidance and advice to the States. Provision was also made for the continuation and expansion of the schemes for the physically handicapped, training, research and administration.

Though there had been substantial expansion of social welfare activities in the country, the effort so far was directed mainly to the provision of some basic curative and rehabilitative services. The prevention and development aspects which are more effective and economical in the long run did not receive adequate attention. With a view to remedy these lacunae, the major thrust in the Fifth Five Year Plan was on the expansion of preventive and developmental programmes. Child welfare was given highest priority. A major programme, Integrated Child Development Services (ICDS) providing a package of services consisting of supplementary nutrition, immunisation, health check-up, referral services, nutrition and health education and non-formal education to children in the age-group 0-6 and pregnant and nursing mothers in rural, tribal and urban areas was launched on an experimental basis. Among women, priority was given to socially and physically handicapped women. New schemes of (i) providing financial assistance to voluntary organisations for construction|expansion of hostels for working women and (ii) functional literacy for women were introduced. A high place was assigned to the role of voluntary organisations. They were further encouraged by providing grants-in-aid with increased emphasis on improvement of standards and expansion of the welfare programmes rendered by them.

Reducing the Inequalities

During the Sixth Five Year Plan (1978—83) it is envisaged to reduce the inequalities caused by growth of industrialisation, occupational mobility and increase in the levels of education and offer suitable assistance to the most needy segments of the population. Children and women have been accorded higher priority as the investment on them would be productive in the long run. Services which are preventive and developmental in character, especially in the areas of child welfare will be promoted on a wider scale in the place of curative services to make an impact on the health, educational and nutritional status of children. Emphasis will be on providing non-institutional services so as to avoid organisational and administrative problems involved in the institutional care. Schemes like distribution of cooperative credit for weaker sections, health programmes, functional literacy and nutrition programme etc. will be dovetailed so as to promote family welfare and improve the economic capacity of the families to stand on their own.

Greater reliance will continue to be placed on the initiative and activities of voluntary organisations. Instead of proliferating schemes with limited allocation efforts would be made to consolidate and expand the existing activities so that appreciable impact could be made on the beneficiaries.

The major thrust of women welfare programmes will be on their employment. Greater attention would be paid to women belonging to lower socio-economic groups, those in need of care and protection and working women. Establishment of day-care centres, creches and balwadis for the children of working mothers will receive greater attention. Importance will be given to the integrated education of the handicapped in addition to the other preventive programmes. Simple, durable and inexpensive equipment is proposed to be made available to the handicapped persons so as to enable them to become economically productive. Attention would also be paid to the identification of social problems, their nature and magnitudes so as to formulate appropriate schemes for the needy groups. □

7 DPD/80—10

Pharmaceutical units in danger of becoming sicl

Several units in the pharmaceutical industry are on the verge of becoming sick.

The new drug policy has led to severe shortages, needless imports of drugs and a progressive erosion of the economic viability of drug firms.

This was stated by Mr Dutt Gupta, doyen of the Indian pharmaceutical industry, during his presidential speech at the Annual General Meeting of the Organisation of Pharmaceutical Producers of India.

He feared that the industry, which had a very good record of performance (*Table I*) *would be unable to meet the* Sixth Plan targets unless the drug policy was revised.

The following are excerpts from his speech:

"There are three main areas where rethinking is urgently called for. These cover policies regarding production, pricing and controls on the industry.

1. Production

"When more production of drugs is the paramount need, we have the anomaly of a sector of the industry being asked to curtail production.

"If several units in the industry have to go back to 1977 levels of production, as required under the new drug policy, a cutback of up to 25% in bulk drugs and formulations is likely Which means that Rs. 250 crores worth of production will just not be available to consumers.

Table I

	1947 48	1979 80
	Rs. (crores)	
Capital Investment	24 (1952)	450
Production	10	1150
Bulk Drugs	18 (1965)	200
Exports	1 27 (1963-64)	30
Research & Development	—	10

"This will aggravate the prevailing shortages, necessitating more imports which are already showing an alarming trend upwards.

"And, ironically, many of the bulk drugs currently imported are being manufactured in the country. The technology, the knowhow, the experience and the capability are all available within the country. Yet we are importing these drugs because the existing units are not allowed to increase production

Mr H N Dutt Gupta, Managing Director of East India Pharmaceutical Works Limited, Calcutta, is a doyen of the Indian pharmaceutical industry. He has wide experience of the industry spanning nearly three decades. He was a freedom-fighter, who courted arrest and was jailed for six years from 1932-1938.

2. Drug prices

"*It is remarkable that, according to the* Government price index, drugs are among the very few commodities in which inflation has been minimal. The annual average increase in drug prices during the last ten years has been no more than 3 9% whereas the increase in "All Commodities" has been as much as 12.5% (Table II).

"However, of late the costs of all *inputs and services used in the industry* have increased enormously, due to the inflationary impact of the current economic environment in the country, while the prices of all drugs, both bulk as well as formulations, are frozen.

"*The impact of these economic forces,* over which the industry has no control, has seriously affected the health and viability of the industry as a whole. Several of the units in the industry are on the verge of becoming sick and some already have.

"If this situation is allowed to continue the whole industry will become sick today or tomorrow as the textile industry did a few years ago.

"It may come as a surprise to many that there are many products in the market today where the cost of basic inputs exceeds the prices at v these are sold.

"Apart from this inflationary in on the cost of production, it is n widely known, as it should be, 25-30% of the price consumers for drugs is accounted for by *and duties alone.*

"A rational, long-term pricing p which ensures that prices are rea able to the consumer as well as t producer, is fundamental for the thy growth of the industry. Price trol must be simple to operate devoid of complications. The pr price control scheme is unneces complicated, rigid and leaves roo arbitrary decision-making. The phasis should be on price regul rather than total control

Table II

Index Number of Wholesale Pri
Base 1970-71 = 100

	All Commodities	Drug Medic
1971 72	105 6	99
1972-73	116 2	101
1973-74	139 7	101
1974-75	174 9	108
1975-76	172 9	118
1976 77	176 6	133
1977-78	185 6	136
1978-79	186 4	136
1979-80	212 3	135
Average Annual Increase	12 5	3

3. Controls

"The pharmaceutical industry top list of industries in the country th tightly controlled, regulated and lated upon. There are at least 7 *stries and Departments at the C* concerned with the control and lation of the pharmaceutical ind In addition to these, there are cor regulations and legislation to en *them at the State level.*

"No wonder, then, there are inev delays in decision-making at point of control. The cumu impact of such delays is staggeri *terms of slow-down in the pa* growth and consequent loss of duction, employment and reven the national exchequer.

"Clearly there is urgent need to away from a period of excessi counter-productive controls to a of vigorous and healthy growth."

Health

Dr. N. K. Sinha*

THE health status of our country at the time of Independence was unsatisfactory and gloomy as brought out by the first comprehensive survey of health conditions in India by 'Bhore Committee' in its report of 1946.

The death rate was 27.4 per thousand population, infant mortality rate was 162 per 1000 live births and the expectations of life at birth was 32.4 years for males and 31.7 years for females. Death rate of mothers at the time of delivery was 20 out of 1000 live births. Many more died due to abortions, miscarriage, sepsis after pregnancy and due to toxaemia during pregnancy.

Malaria, tuberculosis, small pox, cholera, plague are some of the diseases which took heavy toll of lives during those days. Malaria alone was responsible for suffering of 7.5 crore persons every year and about eight lakh persons died of malaria every year. Next to Malaria, Tuberculosis was one of the main public health problems in India. There was no proper data available regarding the morbidity of this disease in our country. As per an estimate mentioned in the 'Bhore Committee' report, there were at least five lakh deaths due to tuberculosis every year.. It is difficult to estimate the number of tuberculosis patients since the diagnostic facilities were limited and there was no system of reporting morbidity.

In addition millions of people suffered from dreaded diseases like small pox, plague, cholera and lakhs died every year. Among those surviving many became blind and disfigured causing heavy burden on the society. The other causes of death were mainly due to diarrhoea and dysentry, respiratory diseases and other fever cases. Leprosy is another public health problem which is still causing much concern.

Facilities not satisfactory

Health services facilities, both curative and preventive, were far from satisfactory as is revealed from the following. There was one doctor for 6,300, one nurse for 43,000, one health visitor for 4,00,000, one midwife for 6,00,000 and 0.24 bed for 1000 population in our country. All government and local body hospitals were situated in urban areas leaving the whole rural population at the mercy of the private practitioners and quacks of various systems of medicines.

*Dy. Adviser, Health, Planning Commission.

A rural dispensary

There were only 25 medical colleges with admission potential of 2,500 annually and the para-medical staff trained during the period were much below the requirements.

Dreadful Diseases Eradicated

During the last 30 years after Independence due to proper planning the health services of the country have improved considerably raising the health status of the population to a somewhat satisfactory level. The dreadful diseases like plague and small pox have been completely eradicated and the incidence of cholera has come down considerably. The table above will give an idea about the above statement.

Disease	1940 No. of cases	1940 No. Expired	1978 No. of cases	1978 No. Expired
1 Cholera	1,76,307	86,997	10,585	251
2. Plague	42,555	7,623	Nil	—
3 Small Pox	1,57,487	41,201	Nil	—

(2,53,332 cases with 94,580 deaths in 1951)

Incidence of Malaria

The incidence of Malaria came down to 49,151 *with no death* in 1961 due to National Malaria Eradication Programme. Unfortunately, Malaria reappeared afterwards with maximum cases of 64,67,215 with 59 deaths in 1976. With the adoption of new modified plan the incidence gradually came down to 27,08,222 cases with 147 deaths in 1979. Considerable headway has also been done in the field of control of Tuberculosis through National Tuberculosis Control Programme. Since First Plan about 600 T.B. clinics, 353 B.C.G. teams and 42,500 indoor beds have been established. 25.376 crore people have been tuberculin tested and 23.821 crore vaccinated with B.C.G. with the result the incidence has come down to 4,95,306 cases with 9,899 deaths in 1978 as reported. Perhaps there were more cases which were not reported. Most significant achievement in the control of tuberculosis is that the social stigma which was causing great anxiety during as late as forties, has been completely removed now.

Problem of Blindness

The problem of impairment of vision and blindness

is another socio-econmic burden of the country. Millions of people become blind due to various reasons like injury, smallpox, trachoma, vitamin 'A' deficiency and cataract. According to an estimate there were about 90 lakh persons with visual impairment in the country during 1977-78. Out of 90 lakh, 50 lakh were due to cataract whose vision being restored after operation. Planned programme has been taken up to clear the back log of operation and to extend eye care facilities to the rural areas as well.

Life Expectancy

The death rate has come down considerably and the life expectancy at birth has increased which will be evident from the following table :—

Year	Death rate (per 1000 population)	Infant mortality rate (1000 live birth)	Expectancy of life at birth
1941-50	27.4	162	Males—32.4 Females—31.7
1978	14.1	129	Males—52.6 Females—51.6

The health services facilities have been augmented manifold and extended to the rural areas also. Specialities and super-specialities have been developed considerably in our hospitals. 106 medical colleges have been estimated with admission capacity of 13,000 per annum. The hospital beds have been increased to 4,48,866 in 1976. The drug industry is now producing products worth nearly Rs. 500 crores as against only Rs. 10 crores in 1947.

Preventive and Promotive measures

During the course of different plan periods, 5462 primary health centres, 50,800 sub-centres have been established upto March 31, 1980. 430 Primary Health Centres have been upgraded to 30 bedded rural hospitals upto March 31, 1979. Alongwith the curative treatment, preventive and promotive health measures are extended to the rural population through PHC, Sub-Centres and upgraded rural hospitals. In addition considerable improvements have been made in district and taluka level hospitals and specialist services are now available there.

Family Planning

Since the fruits of all economic developments are eaten away by the population explosion, India is one of the countries to take up Family Planning as a National Programme since early fifties. As a result the birth rate has also come down from 39.9 (1941-50) per 1000 to 33.2 per 1000 population in 1978. Maternal morality ratio has also come down to 8 per 1000 live births. Nutritional aneamia and Vitamin 'A' deapciency cases have come down considerably due to the proplyactic programme against anaemia and Vitamin 'A' deficiency undertaken under Family Welfare Schemes.

Community Health

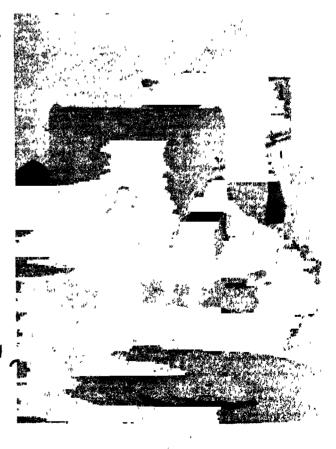
A new Scheme called Community Health Volunteer Scheme has been introduced under which one CHV is selected for each village/1000 population, by the villagers and trained for three months so that he may give some relief for the common ailments and to act as first informant in regard to any serious illness and for preventive and promotive advice under the guidance of multi-purpose worker. The scheme has been accept favourably at majority places.

In addition to the allopathic system of medicin the other systems of medicine e.g. Ayurvedic, Una Sidha, Homoeopathy and Yoga are also being impro ed. Sub-standard institutions are being improved providing qualified and experienced staff and equ ments.

Pragmatic Planning

The socio-economic gains through agricultural a industrial advancement which India is now reap has been brought about quite significantly and to large extent by the control and eradication of ma communicable diseases through planned implemen tion of various health programmes. Gains accrued preventing millions of ultimately death and by red ing the number of man-days loss by preventing disc es is probably incalculable.

Inspite of all this much remains to be done mai for the rural poor and the urban slum dwellers. Pr matic planning is envisaged during the current p (1980-85), to lay the foundation for achieving goal of "Health for All by 2000 A D.".

Drinking water for rural people

Nutrition Programmes

S. Chakraborty*

Midday meal being served to children

THE First Five Year Plan observed that balanced nutrition is an important factor in the maintenance of health and resistance to diseases. It was recognised that the nutritional status of an individual has a direct bearing on his productive capacity. The Plan stressed the adverse effect of malnutrition on infants, and epectant and nursing mothers Supplementary Nutrition for mothers and infants through maternity and child welfare centres, school feeding programmes for primary school children, nutrition education, programme for production of synthetic vitamins, liver oil, etc., were introduced during the First Plan period.

During the Second Plan period nutrition continued to be recognised as the most important single factor in the maintenance of health. In the programme to improve the nutritional status of the community, priority was given to infants, toddlers pre-school children, children of school going age, expectant and nursing mothers. Provision for schemes like nutritional research, nutrition services, nutrition laboratories and establishment of diet kitchens in hospitals were made. Substantial stress was also laid on food production and Community Development. The programme for Expanded Nutrition was launched towards the end of Second Plan.

The Third Five Year Plan provided funds for the setting up of six training centres for children welfare workers for Child Care Centres (Balwadi) and, stress was laid on large-scale production and intake of potaroes, sweet potatoes, tapioca, vegetables, fruits, palm gur and honey. Stress was also given on the production and consumption of nutritious foods, high protein foods etc. It was emphasized that nutrition education and training programmes should be given greater priority. Feeding programmes for the vulnerable groups at the Centre as well as in the States were also introduced. The Expanded Nutrition Programme assisted by UNICEF, which was launched at the end of Second Plan, made progress in Andhra Pradesh, Orissa and U.P. This programme was converted to Applied Nutrition Programme (ANP) which was supported by appropriate training facilities for personnel connected with agricultural production, home science, health extension work and M.C.H. services, etc. The programme was introduced in 221 blocks during the Third Plan. The scheme of providing Mid-day meals (MDM) was launched in 1962-63. This was introduced in pursuance of the recommendation of National School Health Committee.

*Research Officer, Planning Commission.

Mid-day-Meals

Mid-day Meals Programme and ANP were expanded during annual plan period (1966-69). Nutrition programmes of the Department of Food such as Nutrition Education, Mass Media Communication, production and processing of nutritious foods were also expanded. Multi-purpose food was processed under the production of nutritious food scheme of the Department of Food and used in the feeding programmes. A total number of 219 ANP blocks was covered by the end of Third Plan and during 1966-69, 520 additional blocks were taken up. During 1966-67 under MDM, 20 million pre-school age children, expectant and nursing mothers were covered mostly through CARE programmes. UNICEF also launched programmes of supplying skimmed milk for infants, pre-school education and expectant and nursing mothers through Maternity and Child Health Centres and other agencies. Afterwards milk powder was replaced by a new food known as corn-soya milk. Total number of beneficiaries covered under this programme was about five lakhs.

In 1967, the Government of India set up a Committee under the chairmanship of Shri Ganga Saran Sinha to prepare a programme for Child Welfare. This Committee assessed various needs of the children including Nutrition. The Committee referred to the findings of surveys which reported that daily diets of children (1—5 years) were deficient in calories, protein, vitamin 'A' and

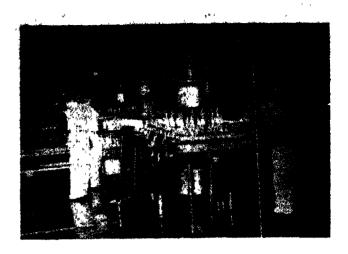
iron PCM, Vitamin 'A' deficiency, nutritional anaemia, etc., were considered by the Committee as serious problems.

Fourth Five Year Plan (1969—74)

The Fourth Plan attempted to set out an integrated nutrition programme. Production of more food was recognised as the first stage towards better nutrition. Development of Agriculture alongwith animal husbandry and fishery was stressed upon to fight malnutrition. The organisations which were serving for the priority classses for the vulnerable groups and priority areas were given financial assistance. The programme of production, processing and supply of food was intensified. Programmes concerned with infants, pre-school children, expectant and nursing mothers were concentrated in known areas of acute malnutrition and became important activities of Balwadis during this period.

Mid-day Meals Programme in schools covered 12 million children and the scheme was included in the State Plans after Third Plan as a Centrally-aided scheme with Central assistance fixed at 40 per cent of the expenditure. This 12 million coverage included 10 million primary school children and two million children of pre-school age from nearby areas. Food providing 300 calories with 8-12 gms. protein per child per day was given. During the Plan period, production of Balahar (a blended food for children) was stepped up. The Special Nutrition Programmes (SNP) was introduced in 1970-71 as a non-Plan programme the budget of the Department of Social Welfare and the scheme was incorporated in 1971-72 in the Fourth Plan under Central Sector for Social Welfare. By the end of February, 1973, the programme covered 31,82,303 beneficiaries. Nutrition programme for pre-school children through Balwadi (Children of 3- -5 years age) and Day Care Centre was started in December, 1970. Foods providing 300 calories and 15 grams of protein for 250 days in a year at a cost of 15 paise per child per day was being given. The Balwadis covered about two lakhs children at the end of the Plan period. Four national-level voluntary organisations, i.e. Indian Council of Child Welfare, Harijan Sevak Sangh, Bhartiya Admijati Sevak Sangh and Central Social Welfare Board, were responsible for implementation of the programmes.

To Control Blindness

During the Fourth Plan, ANP was continued in 1,181 blocks. The Department of Community Development launched composite nutrition programme for

Milk, wholesome Food, at Guhal Milk Diary, New Delhi

women and pre-school children to impart nutrition education, to start Mahila Mandals, to strengthen the supervisory machinery for women programme and to demonstrate feeding and to train womenworkers The scheme relating to control of blindness caused in children by Vitamin 'A' deficiency was designed to benefit 16 million children of five years and below in areas of high incidence of blindness.

The Fifth Plan aimed at augmenting the food production and economic uplift of the population for improving the nutritional status of the community. This was a long-term objective but the short-term objective was to ameliorate existing malnutrition caused due to (i) calorie-protein deficiency, (ii) iron deficiency and (iii) Vitamin 'A' deficiency. Hence the scope of nutrition programmes started during the Fourth Plan was to be intensified and considerably expanded. Supplementary nutrition programmes were included under the Minimum Needs Programme.

In the Sixth Plan, it is proposed to increase the supply of food through production, processing, preservation, fortification, distribution, transportation marketing, import and export, etc. on the one side and nutrition intervention programmes such as supplementary feeding, nutrition and health education environmental hygiene and sanitation, immunisation maternal and child care, change in food habits and production of foods, on the other side.

Yojana—A way of life

Sir,

Being a student of Economics (Hons.), it has been my distinction to be a serious reader of our beloved 'Yojana' since last three years. Now the new Government has evoked the next Sixth Five Year Plan, 1980—85, we the students expect articles and information material from you people. I am dead sure we would be able to see a Special Issue on the Sixth Five Year Plan very soon.

To read 'Yojana' regularly has become a way of life for the thousands of students of Economics and 'Yojana' is doing a great social service in this connection. I wish to see that 'Yojana' should be made a weekly as soon as possible.

Thanking you,

Asmi Raza Mallick
Jt. Secretary,
"Planning Forum"
T.N.B. College,
Bhagalpur

Tribal Development

Dr. B. N. Sahay

THE tribal population of India comes to about 41 million which constituted about 7.5 per cent of the total population. This population comprises of about 427 tribal communities of which the Gonds, the Bhils, the Santals, the Oraons, the Minas, the Mundas, etc. are numerically stronger. Literacy among them is about 11 per cent only. They are at various levels of socio-cultural and economic development, belong to a number of linguistic and racial groups, and are scattered all over the country with concentration in some pockets or zones. In the States of Madhya Pradesh, Orissa, Bihar, Gujarat, Rajasthan, Maharashtra, West Bengal, Andhra Pradesh and Assam, they are numerically stronger as compared to the other States. Most of them live in remote hilly and forest areas and are at a low level of technological development.

Because of the relative backwardness of the tribal people, the Constitution of India provided (in a number of Articles) for the safeguard of their interests, development and welfare. As most of them are economically backward, poverty-stricken, semi-fed, illiterated and have several complex problems, they have been receiving special attention from the government and positive steps are being taken for their development to bring them progressively into the mainstream of national life. During the post-Independence era, there have been rigorous planning efforts and allocation of funds for the same. Thus, while the Second Five Year Plan, went for the forty-three experimental Special Multi-purpose Tribal Blocks (SMPT), the Third Five Year Plan crystallised the approach to their development through the concept of Tribal Development Blocks with more funds and a systematic approach.By the Fourth Five Year Plan period, 43 per cent of tribal population was covered under 504 Tribal Development Blocks The Fifth Five Year Plan, however, brought in the concept of Sub-plan for tribal development with adequate funds both from the Centre and he State resources. Since the strategies have been to develop special tribal Sub-Plans as part of the State Plans supported through special assistance by the Centre. The State administrations have evolved their own strategies for development through the Integrated Tribal Development Projects (ITDP), suiting to the special conditions for the tribal areas. A lot of flexibility in the Plan implementation was permitted. The Minimum Needs Programme, also aimed at covering this segment of population especially. In terms of supplemental Plan outlays on tribal development there has been manifield increase from the First Five Year Plan to the Fifth Five Year Plan. Thus, while during the First Five Year Plan, the supplemental plan outlay was Rs. 19.83 crores it rose to Rs. 42.92 crores during the Second Plan, Rs. 51.05 crores during the Third Plan, Rs. 34 02 crores during the Annual Plans (1966-69), Rs. 84 20 crores during the Fourth Plan, Rs. 159.89 crores during the Fifth Plan (1974-78) and Rs. 174 crores during the Annual plans (1978-80). During the current Annual Plan (1980-81), an outlay of Rs. 144.17 crores (including Rs 74.17 crores for the Backward Classes Sector) has been envisaged.

Deputy Adviser, Planning Commission.

A tribal belle weaving a shawl

The Problem of Approach

The reason for the limited success in ameliorating their conditions has, to my mind, been due to our narrow concentration upon the technical problem of tribal development to the partial exclusion of other factors which are essentially non-economic, but human in nature.

As stated, tribals are at different levels of socio-cultural and economic development and thus have different problems. The tribes which are in food-gathering and hunting stage have altogether different problems from those who practise the slash-and-burn type of shifting cultivation. Similarly, the latter have different problems from those who are settled agriculturists Thus, due to this varied geographical settings and economy, historical background and cultural types, as well as the various preparedness of the communities for launching development schemes, the Problems are also varied and different sets of plans are needed to meet them. Undoubtedly we have made much headway in this direction since the Fifth Five Year Plan. However a lot remains to be done on the part of project administration, in terms of a systematic understanding of the tribal life and culture and selecting suitable approaches to the problems of their development.

THREE DECADES OF PROGRESS AT A GLANCE

	1951	1979
1. Net National Product (At constant (1970-71) (purchasing power of rupee) (in billion)	Rs.167.3	Rs.456 4
2. Power generated (crore Kilowatt)	530	9,218
Power transformers (lakh kw)	1.8	156
3. Petroleum products refined (Lakh tonnes)	2	232
4. Coal (Lakh tonnes)	328	1,047
Iron Ore (Lakh tonnes)	30	410
Lignite (in tonnes)	28,17,933	35,80,133
5. Steel Ingots (Lakh tonnes)	14.7	86.4
Saleable Steel (Lakh tonnes)	10.4	70.2
6. Aluminium (000 tonnes)	4	178.5
7. Copper (000 tonnes)	7.1	21.1
8. Cement (Lakh tonnes)	27.3	193
9. Agriculture		
Area under principal crops ('000 hectares)	78,230	1,03,596
Production of Principal crops ('000 tonnes)	55,011	1,25,604
Sugar (Lakh tonnes)	11.3	64.57
Vanaspati ('000 tonnes)	170	572
Tea (crore Kg.)	27.7	56.0
Coffee ('000 tonnes)	21	118.5
10. Irrigation		
Potential (Lakh hectares)	25	153
Utilisation	13	125

	1951	1979
11. Fertilisers		
Nitrogenous ('000 tonnes)	9	2,013
Phosphatic ('000 tonnes)	9	670
12. Communications		
Rail—Passenger traffic (crore)	12.8	33
Goods traffic (crore tonnes)	9.3	22.33
Road—Vehicles	2,25,000	29,37,000
Passenger vehicles	79,000	3,39,000
Post offices		
Rural	33,810	1,08,491
Urban	5,284	12,508
Telephones (in lakhs)	1 68	23.01
Telephone Exchange	540	6,239
Revenue		
Postal (crore)	21.22	913.96
Telephone (crore)	9	398.64
13. Health		
Medical colleges	30	106
PHCs	—	5,400
Sub-Centres	—	39,000
Hospital beds (in lakhs)	1.13	4.7
Life Expectancy	32 years	52 years
14. Education		
Students in School (crore)	2.35	9.8
Teachers	5,37,918	13,54,460
Primary Schools	2,09,671	4,77,037
Colleges	542	3,270
Universities	27	105
Literacy (percent)	16.6	29.45
15. Other Industries Production		
Sewing machine	33,000	3,64,000
Bicycle	99,000	31,84,000
Motor Cycle & Scooter	—	2,25,000
Electric Fan	2,00,000	33,80,000
16. Banking	June 1969	June 1978
Commercial Banks	89	126
Branches	8,262	28,016

Development Diary

1950 February 28 Dr. John Matthai, the Union Finance Minister announced that Government has decided to set up a Planning Commission under the Chairmanship of Jawaharlal Nehru and with Gulzari Lal Nanda as Deputy Chairman.

1951 July 9 First Five Year Plan published.

September 5 Gulzari Lal Nanda appointed Minister for Planning. He also retains the post of Deputy Chairman of the Planning Commission.

1952 March 2 Sindri Fertilizer Factory in Bihar formally inaugurated by Jawahar Lal Nehru.

August 9 Government decide on the advice of Planning Commission to set up a National Development Council.

October 2 Fifty-five Community Projects for the development of selected villages throughout India inaugurated by President Dr. Rajendra Prasad.

1953 September 21 Foundation stone of Pilani Electronic Research Institute laid.

October 8 The Dy. Chairman of Planning Commission, V.T. Krishnamachari announced that the scope of the Five Year Plan would be extended at a cost of Rs 150 crore to Rs. 175 crore so as to include various schemes to relieve unemployment.

October 10 Schemes for the development of the north-east tribal areas sanctioned by the Government of India.

29 First 'Radar Training Centre' of India opened in Bombay.

November 9 The 1000—tonne S.S. Jalputra launched at Vishakhapatnam.

1954 January 1 The foundation stone of the Tata Institute of Fundamental Research laid.

5 The 100th broadguage locomotive produced at the Chittaranjan Locomotive Works put on the rails.

March 7 Foundation stone of Gandhi Sagar Dam laid in Madhya Bharat.

April 10 Central Salt Research Institute opened at Bhavnagar.

July 8 Prime Minister Jawahar Lal Nehru inaugurated the Bhakra Canals, the world's biggest canal net work. He said he looked upon these works as "temples and places of worship"

29 Standard Vaccum Oil Co. refinery started production.

August 17 Government decided to set up an Industrial Development Corporation.

21 Foundation stone of the Indian Standards Institution in Delhi laid

September 2 Government's decision to constitute a Central Flood Control Board announced.

7 The Government decide to set up two major River Valley Commissions to undertake flood contro measures in the Ganga and the Brahmaputra Valleys.

October 6 A National Health Scheme declared for the entire country.

7 Foundation stone of the Central Labour Institute at Kurla near Bombay laid.

November 27 Sindri's new 60—coke oven plant built at a cost of Rs. 2.5 crore, opened.

1955 January 11 India's first newsprint factory at Nepanagar in Madhya Pradesh started production.

16 Rs. 7 crore National Defence Academy built at Khadakavasla opened.

30 Burmah Shell Refinery, India's largest oil refinery at Trombay started production.

April 7 Kandla port in Kutch declared open.

28 Lok Sabha passed the Untouchability (offences) Bill.

May 2 Lok Sabha passed the Hindu Marriage Bill.

31 215 feet high up-stream coffer dam at the Bhakra Dam site completed.

June 14 7,000 tonne cargo ship sailed on her maiden voyage from Vishakhapatnam to Calcutta.

August 9 Rs. 23 crore Durgapur Barrage Project opened, 80 miles west of Calcutta.

August 19 75 mile long Dadri Channel opened. Rs. 23 crore Andhra Orissa Mach kund Hydro Electric Power Scheme at Waltair inaugurated.

October 2 Jawahar Lal Nehru inaugurated the Integral Coach Factory at Perambur in Madras.

5 Hindustan Machine Tools factory at Bangalore inaugurated.

15 Konar Dam, a D.V.C. Project opened in Hazaribagh, Bihar.

29 Indian Industries Fair opened in New Delhi.

31 Foundation stone of the Gandhi Sarover Dam near Jalia, 47 mile from Ajmer laid.
Rs. 40 lakh dairy factory of the Kaira District Cooperative Milk Producers' Union at Anand opened.

December 10 The foundation stone of South India's biggest river valley project, the Nagarjuna Sagar Project, laid.

1956 January 23 Oil struck at a depth of 10,000 feet in a new well at Nahorkatiya in Assam.

February 6 Rs. 4,800 crore as outlay of India's Second Five Year Plan announced.

10 Draft outline of the 2nd Five Year Plan issued by the Planning Commission.

7 DPD/80—11

24 Agreement reached between Government of India and a British Steel Co. for setting up of a 1,000,000 tonne capacity steel plant at Durgapur.

Announcement of opening of an oil directorate for the prospecting and drilling of oil by the Government.

May 1 Shipping service between India and USSR inaugurated.

August 11 New lighthouse at Port Okha in Saurashtra switched on.

September 1 Life Insurance Corporation of India inaugurated.

National Coal Development Corporation set up.

5 High-level Family Planning Board set up.

17 Oil and Natural Gas Commission set up.

October 2 Rs. 20 crore Tungabhadra High level canal inaugurated.

December 15 Sardar Vallabha Vidyapith, the first rural University in India formally opened in Vallabh Vidyanagar, Gujarat.

50,000 kilowatt capacity, Rs. 10 crore thermal power station, one of the most up-to-date generating electric generating stations in Asia, started operaton at Trombay.

18 The National Council of Applied Economic Research opened in New Delhi.

1957 January 13 Hirakud Dam inaugurated.

20 Atomic reactor in Bombay inaugurated.

March 15 INS Brahmaputra launched.

April 1 Decimal System of coinage introduced in India.

May 19 Neyveli lignite Project inaugurated.

July 9 Rs. 2 crore Umtru Hydro Electric Project, 17 miles south of Gauhati inaugurated.

20 India's biggest sheet glass manufacturing factory formally opened in Bhur Kunda near Hazaribagh in Bihar.

28 687 feet bridge over river Tapti in Basti district of U.P. opened.

October 4 Rs. 225 lakh Peechi Dam, one of the major irrigation projects of the Kerala State inaugurated.

November 12 10 million gallon capacity rapid mechanical Filter Plant at Madras inaugurated.

30 India's third oil refinery at Vishakhapatnam inaugurated.

December 24 Krishna Barrage road bridge at Vijayawada opened for traffic.

31 Amaravathi Project Canal opened

1958 February 5 Sharavati hydro electric project near the Jog Falls in Mysore State inaugurated.

March 29 Rajasthan Canal work inaugurated.

May 13 Discovery of Natural Gas at Jwalamukhi announced.

22 Central Board of Fisheries set up.

25 New 20 kw. transmitter of AIR inaugurated at Cuttack.

June 25 First stage of the work of the Bhakra Dam completed.

July 1 First direct Shipping link between Calcutta and New York inaugurated.

October 1 Metric system of weights introduced.

10 Tata Iron & Steel Co's new blast furnace inaugurated.

12 Periyar hydro electric project commissioned.

November 5 Indian Explosives Factory at Gomia in Bihar inaugurated.

10 Oil struck at Vadser near Baroda.

1959 January 24 First blast furnce of the Rourkela Steel Plant Commissioned.

27 Foundation stone of the first College of Engineering and Technology laid in New Delhi.

February 4 First blast furnace of the Bhilai Steel project started production.

9 Neyyar Irrigation Project inaugurated in Kerala.

March 11 First Aero-engine produced at HAL in India.

14 Durgapur Coke Oven plant commissioned.

April 15 Coal washery of the National Coal Development Corporation opened at Kargali in the colliery area of Bokaro in Bihar.

16 First of the four open earth furnaces at the Rourkela Steel Plant commissioned.

May 16 Defence Science Laboratory opened in Jodhpur.

21 The first military vehicle rolled off at Jabalpur.

September 15 Television introduced in India with the setting up of a pilot TV Centre

December 11 World Agriculture Fair opened in New Delhi.

24 Bharat Electronics at Jalhalli near Bangalore, started production of the defence electronic equipment

1960 January 9 Construction work on Barapari Hydro Electric Project in Assam started.

10 Foundation stone of Rs. 10 crore rail-cum-road bridge across the Brahamaputra at Pandu laid.

13 Work on the first road link between India and Bhutan began.

16 Oil struck at test well No. 4 in the Lunej area.

March 23 Foundation stone of Aluminium Project at Pipri near Rihand Dam laid.

April 25 Steel production started at Durgapur.

May 14 Oil struck at Ankleshwar.

June 6 International Telex service between India and the U.K. started.

30 Second furnace of Durgapur Steel Works commissioned.

July 6 Draft third five year Plan released.

10 Canada—India Reactor goes into operation.

August	1	153 miles long—Leh-Kargil road linking trans-Himalayan regions with Kashmir valley opened to traffic.
November	3	First multi purpose tool factory commissioned in Coimbatore.
	6	Bharat Heavy Electricals Plant at Bhopal inaugurated.
i1 January	14	India's second atomic reactor, Zerlina became critical at Trombay
	28	Foundation stone laid of India's first HMT Watch Factory in Bangalore.
February	27	Nangal Fertilizer factory started production
April	5	Narmada river project inaugurated
	8	First India built gas turbine jet engine switched on in Kanpur.
August	30	First all-Indian integral third class rail-coach delivered to the Indian Railways.
October	2	Shipping Corporation of India Ltd., formed.
	14	First India made electric locomotive commissioned at Chittaranjan.
November	1	First India made transport plane Avro 748 made its maiden flight.
December	29	Foundation stone of Heavy Vehicle Factory laid in Avadi near Madras.
52 January	1	The first public sector oil refinery inaugurated at Nunmati in Assam
	7	Indian Telephone Industries began mass production of improved telephone instruments.
	26	Work begins on India's first Zinc Smelter in the Private Sector. Neendakara Port Project inaugurated at Quilon in Kerala.
February	9	Plant for the production of condensed milk, first of its kind in Asia pressed into service at Moga, Punjab.
	14	Air defence radar sets, developed and manufactured for the first time in India inaugurated in Poona
March	29	Streptomycin plant of the Hindustan Antibiotics Ltd., at Pimpri inaugurated.
May	16	First generator of the Koyna Hydro-electric Project commissioned.
August	5	First Unit of the thermal power station at Neyveli inaugurated.
	9	Heavy Water Plant at Nangal commissioned.
	17	37th vessel built at the Hindustan Shipyard launched at Vishakhapatnam.
63 January	7	Rs. 46 crore Rihand Dam near Mirzapur inaugurated.
	19	Rs. 50 crore Idukki hydro electric project approved by Planning Commission.
February	13	Foundation stone laid of a thermal station at Patratu in Bihar.
	14	2,097 feet road bridge across the river Nalanda at Dingraghat linking Bihar and West Bengal by an all weather road opened.
	16	Foundation stone of a two-mile long bridge over the Sone River in Bihar laid.
April	18	Hindustan Photo Film Manufacturing Co., a government undertaking, opened at Ootacamund.
	22	Rohini, a glider made at the Aircraft Manufacturing Depot of the IAF, was successfully flown in Kanpur.
June	7	Jawahar Lal Nehru declared open the North East Frontier Railway's Rs. 10.6 crore rail-road bridge across the Brahamputra at Pandu.
October	18	Work on the Rs. 15.5 crore all weather port of Mangalore began.
November	21	The first two stage unguided rocket launched successfully from the Thumba Rocket launching station near Trivandrum.
1964 January	4	Varanasi Diesel Locomotive Works turned out first diesel locomotive.
March	7	Naval establishment in Goa, INS Gomantak commissioned.
July	26	Foundation stone of the Rs. 7.75 crore Hindustan Machine Tools Factory laid.
November	16	Foundation of pelletisation plant, the first in South East Asia laid near Panaji, Goa.
December	16	Trombay plant started producing plutonium.
	19	Ordnance factory at Bhandara near Nagpur commissioned.
	20	First long distance pipeline for the transport of refined petroleum products, between Gauhati and Siliguri commissioned.
	28	INS Darshak, first India built-hydrographic ship of the Indian Navy commissioned at the Hindustan Shipyard.
1965 January	15	Barauni Oil Refinery inaugurated.
	23	India's first alloy and special steel plant inaugurated.
February	4	Work on Cochin Shipyard began.
April	16	Namrup Thermal Power Project commissioned.
	24	Kosi Barrage inaugurated.
May	1	Tiruchi boiler plant commissioned
July	2	Madras Aluminium Factory at Mettur inaugurated.
August	15	A daily television service began in New Delhi.
September	1	Surgical instruments plant set up at Madras.
	6	NDC approved the overall size of Rs. 21,500 crore for the 4th Plan.
November	21	Rs. 14 crore barrage-cum-bridge at Indrapuri in Bihar opened.
December	29	First Indian made tank Vijayanta, rolled off the assembly line at Avadi near Madras.
1966 April	5	Bokaro Steel Plant project agreement signed with the Soviet Union.
October	18	Koyali oil refinery in Gujarat inaugurated.

Year	Month	Date	Event
1967	January	4	HAL, Nasik began delivery of MIG aircraft.
		7	Rs. 12 crore Hindustan Photo Film Plant in public sector opened.
		12	Parambikulam—Aliyar multipurpose and multi valley project constructed at a cost of Rs. 60 crore in the western ghats commissioned.
	January	13	Revathi, first prototype light aircraft designed and developed by the R&D Directorate of the Civil Aviation Department had its maiden test flight in New Delhi.
		20	Heavy Machine Tool Plant, third Unit of the Heavy Engineering Corporation inaugurated at Hatia near Ranchi.
		23	India's first graphite plant commissioned at Durgapur.
		25	Foundation stone of Rs. 7 crore Triveni Structural Plant laid at Naini, Allahabad.
	April	26	First India made Mine Sweeper launched.
	August	1	Nagarjunasagar Dam inaugurated.
		28	Kerala's first big hydro electric project—Moozhiyar Power Station of the Sabarigiri commissioned.
	November	20	First Indian made sounding rocket, Rohini launched into space from Thumba rocket launching station.
	December	4	Second India-made rocket, Rohini RH-75 launched successfully from Thumba.
		10	India's biggest fertilizer complex, the Coromandal Fertilizer plant commissioned in Vishakhapatnam.
1968	January	15	Ballistic Research laboratory opened in Chandigarh.
	February	17	750 megawatt Idukki irrigation project in Kerala inaugurated.
	March	24	Second India-made rocket Menaka launched.
	April	6	Construction work of Rs 670 crore Bokaro Steel Plant inaugurated.
	May	19	1,937 feet long bridge on Sharda river, 15 miles from Lakhimpur Kheri in UP opened.
	July	7	Third thermal Unit of Damodar Valley Corporation in Chandrapur inaugurated.
1969	January	5	First MiG-21 engine delivered from Koraput factory moving the country's industry into the supersonic field.
		21	First India-built electronic digital computer commissioned.
	February	26	First India built centaur rocket successfully tested at Thumba.
	April	5	Nirodh factory commissioned in Trivandrum. First India-built tanker for Navy launched.
	May	8	Uranium found in Goa.
	June	1	Agro Industries Corporation set up in 13 States.
	September	24	First phase of Beas Dam project completed.
	December	6	New Fertilizer plant at Panki, near Kanpur, inaugurated.
1970	January	24	Foundation stone of Rs. 18 crore Gujarat Aromatics Project laid at Baroda.
	February	3	Foundation stone of India's first and the world's largest coal based fertilizer plant at Talchar (Orissa) laid.
		9	Rs. 30 crore fertilizer plant at Kota commissioned.
	March	6	Skua rocket with meteorological payload launched successfully from Thumba.
		19	Drilling of the country's first off-shore oil well in the gulf of Cambay, 45 miles from Bhavnagar inaugurated.
	April	12	Rs. 58 lakhs cylindrical radio telescope, one of the largest and the most powerful in the world commissioned at Ootacamund in Tamil Nadu.
	May	6	India's 2,900 ton, second leander class frigate built by Mazagon Dock launched.
		18	Final document of Fourth Five Year plan envisaging an outlay of Rs. 24,882 crore presented to Lok Sabha.
		19	Rs. 140 crore plan for the development of Calcutta metropolitan area, approved
	June	19	Foundation stone of a 3.5 mile road-bridge on the Ganga at Patna laid.
	July	13	International Telex from India made available to 39 more countries
		13	Khetri copper ore mines in Jhunjhunu inaugurated.
	September	16	Work on Salem Steel Plant inaugurated.
	October	2	Work on Rs. 71 crore coal-based fertilizer plant begins at Ramagundam.
		3	Foundation stone of Rs. 23 crore Ashoka Paper Mills laid at Jogighope in Assam
		9	Bhabha Atomic Research Centre produces Uranium—233
		10	Second giant bulk carrier M V Barauni acquired from Yugoslavia.
		19	First India made MIG 21 handed over to Indian Air Force by Nasik Unit of HAL.
1971	March	15	Rs 3 crore cutter suction dredger, the biggest made in any Indian shipyard launched on the Hooghly river near Calcutta.
	July	31	Sixth blast furnace of the Bhilai Steel Plant commissioned.
	August	27	Kalol—Navagam-Koyali Pipeline commissioned in Gujarat.
	October	9	A partly ground controlled rocket launched from the Sriharikota range in Andhra Pradesh
	November	7	Rs. 4.87 crore dry dock at the Hindustan Shipyard, Vishakhapatnam inaugurated.
		11	Farakka Rail bridge inaugurated.
1972	January	1	Bharat Coking Coal Ltd. incorporated as a company.
		—	For the first time India became self-sufficient in rice.
	April	29	Foundation stone laid of Rs. 45 crore Cochin Shipyard.
	June	3	First modern warship built in India, INS Nilgiri commissioned in Bombay

Year	Month	Date	Event
		10	First India built luxury passenger-cum-cargo ship, Harshavardhana launched in Bombay.
		30	Indian Navy's new ocean going tug, INS Gaj, launched at Calcutta.
1972	August	7	First automatic letter press printing machine manufactured by HMT.
	Septembrr	21	India's first dairy plant to process and pack milk in disposable polythene bags inaugurated in Mandi, Himachal Pradesh.
	October	3	First blast furnace of the Bokaro Steel Plant commissioned.
		11	40 km. long Leh Nobra road in Ladakh, the highest road strip in the world opened to traffic.
		24	INS Udayagiri, the third leander class frigate built by the Mazagon Dock, launched.
	November	26	A naval base, INS Dwarka, commissioned at Okha.
	December	13	HAL, Bangalore, produced the first agriculture plane, named Basant used in agriculturaol perations.
1973	January	17	Rs. 44 lakh lighthouse at Pgymalion Point in Nicobar Islands inaugurated
	February	4	88,000 DWT Super Tanker, Jawaharlal Nehru, the largest ship in the Indian Merchant fleet inauguraed.
		9	Electronic techno-meter developed by the Central Mechanical Engineering Research Institute, Durgapur.
		15	Foundation stone of a ship building dock, biggest of its kind on the east coast laid at Garden Reach Workshop, Calcutta.
	March	5	Work on Namrup petro-chemical project in Assam started.
	April	1	Rs. 16 crore DMT plant near Vadodara started production.
		7	India's tallest building and largest hotel, the 45 storey Oberoi Sheraton opened at Bombay.
		8	Work begins on Rs. 12 crore project for the manufacture of scooters at Lucknow.
		13	A Rs. 190 crore petro-chemical complex at Jawaharnagar, Gujarat commissioned.
		14	Foundation stone of Rs. 120 crore coal based fertilizer plant at Korba in MP laid.
		20	Atomic Power Station at Rawatbhata near Kota started operation.
	May	1	All non-coking coal mines in India nationalised.
	August	28	State-owned Radio and Electrical Manufacauring Company, Bangalore developed for the first time in India, portable X-Ray equipment.
	October	2	Foundation stone of country's biggest oil refinery near Mathura laid.
1974	Feburary	19	Oil struck at a depth of 962 metres in the first well drilled by 'Sagar Samrat' in the Bombay High structure.
	May	18	India successfully carried out a peaceful underground nuclear explosion at Pokhran in Rajasthan desert.
		26	India's biggest thermal power station at Koradi near Nagpur started, generating power.
	October	12	First Unit of the thermal power plant at Bhatinda commissioned
	November	23	INS Himgiri, a leander class frigate built by Mazagon Dock for the Indian Navy, commissioned a Bombay.
	December	15	A 1000 ton per day ammoni plant said to be the largest in the world, commissioned at Tuticorin
1975	January	11	Oil struck in the third well at Bomb High.
		17	India's first micro computer, Mosca 1080 PS. launched in New Delhi
	February	12	India eradicates small pox.
	April	19	Aryabhata, the first Indian satellite, launched from the Sovie Union. India took control of Aryabhata on April 22, 1975.
	May	9	India's first electric typewrite released by the Hindustan Teleprinters Ltd.
		19	Korba Aluminium Plant in M started producing ingots.
	June	28	First phase of Rajasthan canal proje completed.
	September	21	First oil well spudded in Benga basin.
	October	10	Third watch factory of HMT inaugurated near Srinagar.
		26	Oil struck in a well at Kharsangh i Arunachal Pradesh.
1976	January	4	Rs. 2.45 crore wool processin factory, largest in Northern Indi inaugurated at Nalagarh, Himacha Pradesh.
	February	6	Rs. 23 lakh microhydel project at Along in Arunachal Pradesh inaugurated.
		18	INS Udayagiri, the third India-buil warship commissioned in Bombay
	July	22	Bharat Refineries complex at Trombay commenced processing of Bombay High crude.
	August	3	Electrified New Delhi-Howrah rai route commissioned.
	October	9	Bombay-London direct dialling tele phone link inaugurated.
	December	8	Rs. 97.25 crore outer harbour a Vishakhapatnam inaugurated.
1977	February	28	Work on the first super therma power station near Singrauli i Mirzapur district of UP began.
	April	20	1350 metre long road bridge acros Narmada inaugurated at Broach.
	November	13	Agri-Expo 77, biggest agricultura exposition inaugurated in New Del
1978	January	20	The first 60 mw capacity powe generation plant of the Pong Dan commissioned in Himachal Pradesh
	March	21	Indian Telephone Industries, Ra Bareli unit inaugurated.
	April	9	The foundation stone of the R 232.52 crore upper Indravati Multi purpose Project at Mukhiguda i Orissa laid.
	May	11	The foundation stone of a gas tur bine power station at Lakwa i Assam, laid.

	June	13	Oil from Bombay High starts flowing through a 203 km. undersea pipeline.
	July	10	The first 110 mw unit of the Nagarjunasagar hydro-electric project commissioned.
		14	Uranium found in Meghalaya and the hills of Assam.
		25	Uranium deposits found near Mirzapur, UP.
	August	5	India's first indigenous and largest power generating unit of 200 mw capacity commissioned at Obra in Mirzapur, UP.
	September	6	The 416 km. Salaya-Viramgam-Koyali pipeline to the refinery near Baroda commissioned.
		20	Asia's biggest tool room and training centre established at a cost of Rs. 5 25 crore opened in New Delhi.
	October	21	The Rs. 199.18 crore South Dry Dock, one of the largest in South-East Asia, opened at Naval Dockyard, Vishakhapatnam.
	December	2	India's second 210 MW power unit commissioned at Badarpur, New Delhi.
1979	January	1	The second 200 MW unit at the Obra Thermal Power Station in UP commisioned.
		3	First phase of 36 50 crore Pazhassi irrigation project near Cannanore in Kerala inaugurated.
		5	Rohini-200, the first monsoon experimental rocket (MONEX) successfully launched from the Thumba Rocket Launching Station.
		13	Oil and Natural Gas struck near Jambusar in Bharoch district, Gujarat.
		21	Rs. 209 crore Bodhghat Hydel Project's foundation stone laid in Madhya Pradesh.
	February	8	Rs. 38 5 crore Pamba Irrigation Project at Vazhakkunnu in Kerala inaugurated.
		14	The Union Cabinet approves a 1,100 MW Super Thermal Power Station at Farakka in West Bengal.
	March	20	Beas Power Project completes the first phase with the commissioning of the fourth 60 MW Unit of the Pong Power Plant.
		30	Rs. 400 crore petro-chemical complex at Jawaharnagar dedicated to the nation.
	April	1	120 MW capacity, 6th unit of the Chandrapura Thermal Power Station of DVC commissioned.
		13	Doordarshan Kendra in Jullundhur inaugurated.
		15	86.44 kilometre long Trivandrum-Kanyakumari broad gauge rail line inaugurated.
	May	19	Rs. 60 crore field gun factory opened at Panki, Kanpur.
		31	HMT to set up a machine tool complex in Nigeria.
	June	7	India's second satellite "Bhaskara" launched from a Soviet Cosmodrome.
	September	14	The Union Cabinet clears three new coal projects to be located in Maharashtra, Madhya Pradesh and Bihar which will produce 2.49 million tonnes of coal annually.
		15	Huge coal reserves found in Bankura, West Bengal.
	October	2	Operation Flood II inaugurated in Delhi.
	November	4	ONGC strikes another offshore oil-field near Bombay.
		23	Rs. 687 crore fertilizer project at Hajira in Gujarat approved by the Union Cabinet.
		24	Work on the country's second Rs. 71 crore lignite based power station begins at Panandhro in Kutch.
	December	21	Natural gas struck, in Narsapur in Andhra Pradesh.
1980	January	1	Huge reserves of bauxite are discovered on the east coast—India now third country in the world after Guinea and Australia.
		23	'Rani Padmini' 75,000 DMT bulk carrier, the biggest ship built in the country goes to the sea.
		31	Himachal Pradesh and Haryana sign agreement on the Joint Implementation of Rs. 300 crore Nathpa-Jhakri Hydel Power Project.
	February	20	Natural gas and oil struck at Asta Valner village in Broach district
		23	Gas and oil struck at Motwan field, Ankleshwar.
	May	15	INS Godavari, the first entirely Indian designed frigate launched at Mazagon Dock.
		16	INS Taragiri, fifth leander class frigate built at Mazagon Dock commissioned.
	July	18	The Satellite Launch Vehicle (SLV-3) successfuly blasted off from Sriharikota, placed 35-kg Satellite, Rohini in orbit round the earth. Both SLV-3 and Rohini were conceived, designed and built by Indian scientists.

Highlights of Planning

(Crore rupees)

First Five Year Plan (1951—56)

Total outlay	2,069
1. Agriculture & Community Development	361
2. Power	127
3. Irrigation, multi purpose irrigation and power projects	434
4. Industry	173
5. Transport & Communication	497
6. Social Services	340

Second Five Year Plan (1956—61)

Total outlay	5,600
1. Agriculture & Community Development including irrigation & flood control	950
2. Power	500
3. Industry & Mining	1,400
4. Social Services	1,350

Third Five Year Plan (1961—66)

Total outlay	10,400
1. Agriculture & allied sectors	1,460
2. Irrigation & flood control	650
3. Power	1,062
4. Industry & Mining	2,995
5. Transport & Communication	1,736
6. Social Services	1,697

Annual Plans (1966-67, 1967-68, 1968-69)

Total outlay	6,756
1. Agriculture & allied sectors	1,166
2. Irrigation & flood Control	457
3. Power	1,182
4. Industry & Mining	1575
5. Transport & Communications	1,239
6. Social Services	992

Fourth Five Year Plan (1969—74)

Total outlay	24,398
1. Agriculture & allied sectors	3,466
2. Irrigation & flood control	964
3. Power	2,448
4. Industry & Mining	3,729
5. Transport & Communication	3,887
6. Social Services	2,473

Fifth Five Year Plan (1974—78)

Total outlay	53,411
1. Agricultur & allied programmes	4,643
2. Irrigation & flood control	3,440
3. Power	7,293
4. Industry & Mining	10,200
5. Transport & Communications	6,881
6. Social Services	6,827

TRENDS

M.M's. Call for Greater Power generation

ADDRESSING Power Ministers of the States of Northern and Eastern Region, in New Delhi recently the Prime Minister, Shrimati Indira Gandhi, has called upon the State Governments to help bridge the gap between the demand and supply of power. She has said that the rate of power generation should at least be 10 per cent ahead of the rate of growth in demand. She has asked the States to co-operate with the Centre to end the power crisis.

She also has said that the tempo of rural electrification must be maintained so as to energise pumping sets in rural areas and also to improve the standard of living in the villages. She has asked the State Governments to ensure supply of power to farmers for at least six to eight hours a day. They should also ensure whether the timings suit the farmers or not. Wherever there was shortage of power, the supply timings should be notified; then only it would be efficiently used

Cheaper Credits to Agriculturists

AT the first meeting of the Consultative Committee for the Ministry of Agriculture held in New Delhi recently, Members demanded that interest rate on agricultural loans be brought down to a reasonable level.

It was explained that the rate of interest, presently charged by the land development banks and commercial banks from borrowers for raising plantation crops was 9.5 per cent for small farmers and 10.5 per cent for others. The Committee was appraised of the efforts the Agriculture Ministry had been making in persuading the Finance Ministry to provide credit to agriculturists at a lower rate of interest. The Agriculture Minister, Rao Birendra Singh assured the Members that he would continue striving to ensure cheaper credit to agriculturists.

Another point emphasised by the Members was remunerative prices for the growers particularly of wheat and cotton, and subsidised fertilizers and other inputs for small farmers with holdings upto ten acres.

The Agriculture Minister informed the Committee of his discussions with his colleagues in the Ministries of Commerce and Industry to ensure remunerative prices to cotton growers.

More Employment Opportunities for Youth

ALL efforts should be made to find out solution to the unemployment problem in the country, stated Shri Narayan Datt Tiwari, Union Minister for Planning, addressing the senior officials of the Planning Commission in New Delhi recently. The Minister laid special emphasis on providing employment to the urban educated youth, as thousands of them were coming out of colleges and universities every year The problem needed immediate attention.

Shri Tiwari also stressed the importance of accelerating the economic development of North-Eastern States and Hill areas of the country. He said that special schemes should be launched for the development of this region on a priority basis.

Shri Tiwari reviewed the preparatory work being done in the Planning Commission for the formulation of Sixth Five Year Plan. The Minister expressed satisfaction on the progress of work. He however desired that a working group on employment be constituated immediately so that the problem of unemployment could be tackled in a more effective manner.

The Minister also stressed the need for increasing production in all key sectors, especially in agriculture.

Efficiency of Postal Operations Stressed

EFFICIENCY of postal operations, particularly collection, transmission and delivery of mail and the service at the postal counters is of paramount importance. This was stated in New Delhi recently by Shri C. M. Stephen, Minister for Communications while inaugurating the conference of Postmasters General. All items of work which have a definite impact on operational efficiency, should receive careful and prompt attention not only from the Head of the Circle but also at the lower levels. He called upon the PMGs that their moto should be that the year 1980-81 be the year of consolidation and quality perfection.

Telecom Expansion in North-Eastern Region

THE P & T Department has drawn up a plan to expand the telecommunication facilities in the North Eastern Region. More than 2,000 route kms of microwave communication system will be provided in the North Eastern region during the current Plan period. About 1700 route kms. Ultra High Frequency (UHF) radio relay systems will also be commissioned in this region during this period. Earth stations will be located at Aizawl, Shillong, Itanagar Kohima, Imphal and Agartala to provide communications through satellite.

Three new telex exchanges will be commissioned at Jorhat, Kohima and Silchar with 20 lines each.

The manual telephone exchanges at Agartala, Dibrugarh and Imphal would be replaced by automatic exchanges. The automatic telephone exchanges at Gauhati and Shillong will be expanded by 1500 and

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1000 lines respectively. Besides, many other smaller automatic and manual exchanges in this region would be expanded by a total of 16,000 lines during the period.

The capital towns of Assam, Meghalaya, Tripura, Manipur and Nagaland States are already connected to the National Telecom network by microwave systems. As regards Union Territories, Aizawl—the capital of Mizoram is connected to Silchar by a multichannel VHF system and Itanagar, the capital of Arunachal Pradesh is linked with Jorhat by an open wire system upto North Lakhimpur and multi-channel VHF system beyond North Lakhimpur.

Import of Steel

ABOUT 1.46 million tonnes of saleable steel will be imported in the current year at an estimated cost of Rs. 450 crore to meet the anticipated shortfall in domestic production of saleable steel in 1980-81. In the current year the demand for saleable steel is expected to be a little over 10 million tonnes. Anticipted production from all the steel plants will be 8.62 million tonnes. To cover the gap of about 1.46 million tonnes the Government has decided to import.

India Bangladesh Trade

INDIA'S exports to Bangladesh in 1978-79 were worth Rs. 52.57 crores and imports from Bangladesh were worth Rs. 1.80 crores. During the first six months of 1979-80 India's exports to Bangladesh were worth Rs. 32.66 crores and imports worth Rs. 1.70 crores.

Our major items of exports to Bangladesh are coal, textile yarn, fabrics, iron and steel, machinery and transport equipments, crude fertilisers and crude minerals. One of our main items of imports from Bangladesh over the last few years has been newsprint.

W.B. Unemployment Allowance

UNDER the West Bengal Government's scheme of providing an unemployment allowance of Rs. 600 per year, about two lakh persons have been covered from April 1978. The persons receiving this allowance have to work with different projects in urban and rural areas and some more payments are allowed, considering their work, at the rate of Rs. 200 for every 100 days.

Rid Country of Drought-Flood Syndrome

SHRI Kedar Pandey, Minister for Irrigation, has said that we have to overcome the drought-flood syndrome if the country is to have sound infrastructure for its economic development. The Minister who was inaugurating a 4-day discussion on the National Perspective for Water Resources Development in New Delhi recently, said that water had already become the limiting factor in the agricultural development of some of our areas and it would be a critical factor all over the country in the near future.

The Minister said that more than one-third of our country was classified as drought-prone. The pressing need, therefore, was to harness our rivers to the maximum extent practicable and build maximum storage capacity to conserve waters which otherwise went waste and caused flood damages. He wanted that prospective needs of various basins should be assessed and a pragmatic view taken in this respect.

The Ministry of Irrigation and Central Water Commission have formulated a national scheme of interlinking river systems and create storages and a part of the scheme solely depending on inter-State cooperation within the country is before them, he added. He asked the top engineers and administrators of the country to take the initiative and recommend a technically and economically feasible scheme which could be implemented.

Engineering Exports

DURING the last decade, our engineering exports registered a six-fold increase and under-gone striking qualitative changes in products and markets. Towards the end of the decade Mexico and Switzerland emerged as the largest importers of our engineering goods which places had been occupied by Thailand and Indonesia Twenty product groups accounted for 7 per cent of the total engineering exports in 1977-78 In the 1970's commercial vehicles and auto parts hand tools, M S. pipes and tubes found the greatest demand among the overseas buyers. Exports of diesel engines, industrial machinery, steel structurals and bolts and nuts registered a continuous increase in the demand.

Development of Water Resources

A Scheme to create optimum storage capacities and interlinking of various rivers has been prepared by the Government It would augment irrigation of about 25 million hectares of land by surface water and 10 million hectares by ground water. The draught-prone, backward and under-developed areas will get priority for irrigation. It will also reduce the flood damages significantly.

Trade Gap may widen

THE trade gap, which was over Rs. 2,200 crore last year, may widen further despite the 16 per cent increase in exports envisaged for 1980-81, according to the Commerce Minister, Shri Pranab Mukherjee. The export target for 1980-81 was fixed at Rs. 7,100 crore as against the actual exports of about Rs. 6,100 crore last year. Yet the trade balance might be tilted further against the country because of a larger bill for imports of essential items such as oil and petroleum products, cement, steel and aluminium. To correct the imbalance, the Minister called for an all-out drive to increase exports.

BOOKS

Economic Planning In India

Economic Planning By Mamatha Patankar; Sultan Chand & Sons, New Delhi. Pages 456; Price Rs. 25.

ABOUT 40 per cent of our population is below the poverty line, and the rest is not very much better; it is only just on or above the mark. But if we take the country as a whole, we are much below the international poverty line.

There may be number of reasons for such a sad state of affairs The most striking is that a mere twenty-five years of planning cannot wipe out centuries of foreign economic exploitation of the country. This seems understandable, though this cannot be the only explanation. One would like to know whether all was well with our planning. The importance of the study of the Indian economy cannot, therefore, be underestimated. While economists look at planned development of the country in their own enlightened way, lecturers in economics are interested in dealing with the subject not only in a comprehensive and exhaustive manner; they are also very much concerned with conveying to the student community, in an easily understandable language, their own ideas gathered during their teaching experience. Mamatha Patankar's book on Economic Planning falls very much in this category.

All the important aspects of development and planning have been covered by the author in just over a dozen chapters arranged in a logical sequence. They deal with such aspects as economic development and underdevelopment, determinants of economic development, development strategies, capitalist and socialist patterns of economic development, planning for prosperity, types of planning, problems concerning development planning, techniques of development planning, mobilisation of financial, human and natural resources, the Five Year Plans and the People's Plan II.

Perhaps the most significant part of the book is the author's critical appraisal of planning and its implications First she takes up the question of the hindrances to economic development in our country. Describing over-population as the chief culprit, she says that the rate of population increase constantly overtakes the rate of increase in output The gap between supply and demand remains the same or even gets widened The race between what she calls economic accretion and demographic accretion is won by the latter with the result that when the national product is divided by the population, the per capita income shrinks. The effort to achieve economic progress gets cancelled in the process.

The author desires that the right lessons should be drawn for the future planning in India, and she gives her own suggestions on how this should be done. She says that, first of all, we should be clear in our objectives. To many objectives are likely to blur the vision and fritter away the country's resources. She feels a weak government is neither able to mobilize the resources nor to enforce its programmes on the people. A democratic set up may not be conducive to rapid success. She advocates a strong population policy. Unless the growth of population is stabilized at a lower level, she argues that it is impossible to meet the requirements of education, medical care, housing, food, clothing and other necessities of life adequately. The most important lesson that is to be learnt in planning is the holding of the price line. She says that if prices go out of control, the whole economic edifice will collapse and it would be difficult to mobilise the resources and finances to carry out further planning.

Arun Sharma

Rolling Plan

Rolling Plan—A New Experiment for Developing Economy, Sterling Publishers Pvt. Ltd. New Delhi, Pages 137, Price Rs. 50/-.

THE book under review explains the merits and demerits of the concept of rolling plan. The author says that in rolling plan, the size of the plan will correspond to real savings and so there is scope for annual reassessment. But, as he adds, "as years pass on, the working of the rolling plan is likely to add to some new complications in the task of plan formulations..............after a lapse of 15 to 20 years, for the ordinary public it will be difficult to find from where the Plan started and what concrete achievements it has made...................ultimately we are in a fix and not sure of our achievements."

Since the rolling plan idea has now been given up, the book is of theoretical value only.

R. R. Rao

Economic Growth

Classical Theory of Economic Growth : by K. C. Roychowdhury, Published by Macmillan India, 4 Community Centre, Naraina Industrial Area Phase I, New Delhi-110028; pages 205, Rs. 20.

THE author, a Professor of economics, suggests that the static method in dynamic economics which the classical economists used in their theoretical organ might be eminently suitable for studying the problems of growth in some of the semi-feudal over-populated countries in the contemporary world. A brief exposition of the theory of economic growth as embedded in the classical political economy has been attempted in this book.

Mr. Roychowdhury has emphasised classical economics as a system treating particular doctrines and

propositions of different writers as integral components, rather than as isolated parts of a component, rather than as isolated parts of a comprehensive approach. He has chosen a good moment to write about the classical model of economic growth involving capital accumulation, population growth and technical progress. He has impounded the ideas of the classical economists about the causes of development of a capitalist economy, the nature of the growth process, the interrelationships of growth and distribution, and their long-run implications. The author has also examined the family of growth models that constitute the classical edifice. He also examines the relevance of the classical growth theory to the problems of development in some of the backward over-populated countries in the contemporary world.

This is a magnificant work, well-conceived and excellently executed. Bibliography at the end of the book-gives the list of executive research carried out so far on the subject. This by itself is a valuable contribution giving the readers a comprehensive idea of the subject. Mr. Roychowdhury has therefore, done well to chalk out the various fields and aspects of different topics that still await research and that should receive high priority. The book would be of tremendous assistance to students in advanced under-graduate and post-graduate courses in economic development.

Nitish S. Rele

Industrial Estates

Role of Industrial Estates in a Developing Economy by R. L. Sanghvi, (Multi-Tech Publishing Co., 15, Yogesh, Hingwala Lane, Ghatkopar-East, Bombay-400077), 1979, Pages : 285 (Cloth) Price Rs. 75/-

INDUSTRIAL estates have a vital role in promoting industrial development in developing economies like ours. Yielding a large bunch of external economies, industrial estates constitute a strong inducement to invest. Industrial estates were started in India with great hopes in their efficacy as tools of balanced industrial growth, rural development and development of small scale industries. There are at present more than 500 industrial estates in India. In recent years there is growing emphasis on these estates. So it is of great significance to study the problems as well as efficiency of these industrial estates. The book under review is a commendable work in this direction. The study is primarily based on a survey of six industrial estates located in South Gujarat, conducted by the author himself. The author found that the industrial estates in South Gujarat have fulfilled their prime objective of small industry development, attracting new entrepreneurs to the small industrial sector.

Dr. Sanghvi's work is a very timely and valuable study. Economics students as well as policy makers interested in Indian industrial growth can hardly afford to miss it.

Jandhyala B. G. Tilak

Land Management

Farm Size, Use, Efficiency and Income Distribution : by G. R. Saini, Institute of Economic Growth, Allied Publishers Ltd., 1979, 218 pp. Rs. 60/-

THIS is a doctoral thesis by G. R. Saini and deals primarily with problems relating to land management and cultivation. The main conclusion of the authors supported by a wealth of relevant statistics, perhaps collected together in one place for the first time, is that productivity of land is in inverse ratio to the size of the holding. He means thereby that the larger the holding the less is the intensive attention it gets from the owner.

The author's analysis on the impact of modern technology on agriculture is interesting only in a limited sense. First, there is no finality about agricultural technology since technology goes on continuously changing. Secondly, use of appropriate technology may give only a temporary benefit to the cultivator, since continuous and intensive application of modern inputs like fertilisers etc., over a period of time, may denude the land of its basic fertility.

Thus indiscriminate use of modern technology and inputs may soon lead to the inevitable law of diminishing returns.

The author could have done something more useful to study in depth to what extent land fertility fluctuates with the use of chemical ferilisers alone or mixed with natural manure. Such an attempt should have been more useful both to the farmer and to the community as a whole instead of re-codifying what is already known to agricultural economists.

E. P. Radhakrishnan

Functions of Governor

Office of the Governor in India : by M. S. Dahiya published by Sandeep Prakashan, Delhi, 1979, pp 324, price Rs. 80.

IN this book, the author very ably traces the history of the office of the Governor, presents his study of constitutional provisions, discusses the intention of the framers of the constitution, cites judicial pronouncements and describes the functioning of the Governor in the various States to show that there personalities, interests and attitudes vis-a-vis those or their Chief Ministers influenced their roles.

It is not possible to agree with the author in his subtle distinction of 'discretion' and situational discretion, because discretion is not expected to be arbittrary but guided by cogent reasons.

The book undoubtedly has a wealth of information, evincing the author's deep and abiding interest in constitutional democracy and ability to analyse. It is a well-reasoned and illuminating thesis on the role of the Governor as given in the Constitution and how it has been lived. It should serve as a useful reference book for all constitutional lawyers, politicians and students of constitutional practices.

B. S. Jain

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India—made Rohini Satellite is now orbiting the earth once every 97 minutes at a maximum distance of 600 km and a minimum of 285 km

Indian Satellite In Space

FRIDAY, July 18, 1980 is a day to remember. Prime Minister Smt. Indira Gandhi has described, it a great day for India and Indian science. On that historic day India successfully launched a 35Kg satellite 'Rohini' into the space.

The Satellite Launch Vehicle (SLV-3) which blasted off successfully from a launch pad at Sriharikota in Andhra Pradesh placed the India-made Rohini in orbit round the earth at a height of 260 km. and a velocity of 28,000 km per hour The satellite is orbiting the earth once every 97 minutes at a maximum distance of 600 km. and a minimum of 285 km. The satellite derives its name from the fourth of the 27 stars in the Hindu almanac.

The 22.7 metre four-stage launch vehicle, SLV-3 which weigh 17 tonnes was fabricated at the Vikram Sarabhai Space Centre, Thumba, near Trivandrum and cost Rupees 20 crore. The present experimental launch had cost about Rupees one crore. The solid propellants alone weigh 13 tonnes Dr. Satish Dhawan, Chairman, Indian Space Research Organisation (ISRO) had said: "The entire launch vehicle, the rocket and the satellite were conceived, designed and built by Indian space engineers".

The satellite was designed for a lifetime of 100 days. But from its performance, it is now expected to function for about three years.

The Prime Minister Smt. Indira Gandhi in a message has said, "This is a great day for India and Indian Science. I congratulate our scientists and technicians of ISRO on their achievement in launching SLV-3 at Sriharikota. The nation is proud of them. My good wishes for further success."

The Satellite launch vehicle, SLV-3 which blasted off successfully from Sriharikota launching pad.

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Yojana

TRENDS

Sixth Plan Objectives

OUTLINING the objectives of the Sixth Plan (1980—85) now being formulated, the Union Minister for Planning, Shri Narayan Datt Tiwari, said in New Delhi that for a frontal attack on poverty and unemployment, agriculture and rural development programmes would have to be recast so that they reach the poorest of the poor. Also the Minimum Needs Programme would have to be pursued with vigour. Addressing the first meeting of the reconstituted Parliamentary Consultative Committee attached to his Ministry in New Delhi the Minister said that massive efforts would have to be made to step up programmes for development of oil, both off-shore and on-shore, coal and power and a substantial expansion of transport capacity.

Shri Tiwari welcomed the suggestions made by the Members for removal of unemployment and for significant increase in irrigation potential—major, medium and minor and command area development. He said that these and other suggestions would be taken note of while formulating the Sixth Plan.

Land for Landless

THE Madhya Pradesh State Government has through an ordinance conferred on the rural landless full land ownership or "Bhumiswami rights" in respect of Homestead land, that is the land occupied by them for dwelling and related purposes. The ownership vests in such an occupant, irrespective of the fact whether the Homestead land is government or private property. Under the new law, Homestead land implies apart from the dwelling place, the courtyard or compound, garden, place of worship as well as the family graveyard. "Bhumiswami right" extends to all or any of these, forming part of the Homestead land. No compensation, whatsoever, is payable to the former private owners of Homestead land and dwellings.

Madhya Pradesh is the second state in the country after Kerala to confer the Bhumiswami title of Homestead land on the rural landless.

West Bengal Flood Protection Scheme

THE Planning Commission has approved the Flood Protection Scheme under Ghatal Master Plan in West Bengal at an estimated cost of Rs. 49.17 crores.Ghatal, Daspur I & II, Chandrakona I & II, Debra, Keshpur, Panshkura I & II and Midnapore areas of West Bengal will be protected by these flood protection measures.

The scheme envisages the development of new cossye to carry a discharge of one lakh cusecs, alongwith development of main cossye for 1,40,000 cusecs

Perspective Plan for Coffee Development

A long term perspective plan for coffee development upto 2000 AD has been drawn up. It envisages achievement of the production target of 1.5 lakh tonnes by the end of 1985 and 2 lakh tonnes by 2000 AD. An additional area of 1.3 lakh hectares would be brought under coffee by 1993-94. Emphasis is now being laid on schemes for promoting the production by small growers and extending cultivation to the non-traditional areas in North Eastern States. During 1978-79, 66,216 tonnes of coffee valued at Rs. 157.46 crore was exported against 55.827 tonnes in 1977-78 valued at Rs. 191.10 crore. Exports from April 1979 to February 1980 are of the order of 51,971 tonnes valued at Rs. 148 crore. In November 1979 the Coffee Board obtained an export order the largest one to date 750 tonnes of instant coffee to U.S.S.R.

Statistics Board Suggested

THE Committee on National Statistics System in its report says that the Statistical Organisation need strengthening both in regard to manpower and specialised expertise to play their appropriate role in planning and policy formulation. It recommended in its report that it would be desirable to have a whole-time statistical adviser at a sufficiently high level in each major Ministry like Agriculture, Commerce, Defence, Education, Health and Family Welfare, Finance, Petroleum & Chemicals, etc., where integration of Statistics of different subjects handled by the Ministry was essential for taking policy decisions The report was presented by the Chairman of the Committee, Shri S. M. L. Bhatnagar, Secretary, Department of Statistics to Shri Narayan Datt Tiwari, Union Minister for Planning in New Delhi recently.

For exercising rationalised supervision of collection of statistics at the village level, to begin with, one Statistical Assistant has been recommended for each block to function under the direct technical and administrative control of the District Statistical Officer

Maharashtra Project

PAWANA hydro-electric project, which envisages utilisation of water released from the existing Phagne Dam across the river Pawana, a tributory of river Krishna in Maharashtra, has been approved by the Planning Commission.

Estimated to cost Rs 395 lakhs, the project is to be included in the Sixth Plan of the State and taken up for implementation during the current year. The project also envisages installation of a 10 MW unit at the dam site power house.

Delhi IIT's Feat

THE Indian Institute of Technology (IIT), Delhi has established a two-way microwave troposcatter Communication link with the Central Electronics Engineering Research Institute (CEERI), Pilani. It is the first communication link of its kind in India to be set up for research and educational purposes. The experiments to be carried out on the link are expected to yield results which would be valuable, among other agencies, to the Defence, All India Radio, Post and Telegraph, and Indian Meteorological Department Weighing about 3 tonnes, the terminal at the Delhi end was air-lifted to the top floor of the 8-storeyed IIT building by an Indian Air Force helicopter.

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Yojana seeks to carry the message of the Plan but is not restricted to expressing the official point of view.

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Editorial

Credit Discredited

TAMIL NADU and Maharashtra, which have been leaders of the cooperative movement in the country, have now initiated a process which is likely to undermine its further growth. The Government of Tamil Nadu has decided to write off about Rs. 60 crore taccavi and cooperative loans due from small and marginal farmers. Maharashtra has announced similar relief to the tune of about Rs. 50 crore. This has been followed by Karnataka's action in waiving penal interest on cooperative dues and declaring a moratorium on cooperative farm loans, Kerala's decision to waive interest on old cooperative loans, Orissa's deisre to write off loans of Rs. 22.50 crore and Tripura's suggestion to grant similar concession.

It is stated that the small and marginal farmers are overburdened with indebtedness and need urgent relief. The drought in some areas is cited as another reason. One State government was candid enough to say that an organised campaign by some elements against the repayment of cooperative loans has resulted in large overdues and obstructed further flow of cooperative credit and the small farmers are once again at the mercy of landlord-moneylenders for credit.

The Reserve Bank, the Central Government, the Press and responsible public leaders, including cooperators, have opposed the writing off of cooperative loans which carry low interest. They feel that such a step will adversely affect recovery of all agricultural loans, place a premium on wilful default, undermine the viability of credit institutions, reduce institutional credit facility and erode the State governments' resources. While concessions, like rescheduling of repayment, may be allowed in hard cases, there is no justification for the blanket writing off of cooperative loans. Already about 45 per cent of cooperative loans and about 50 per cent of public sector bank loans to agriculture are outstanding and the writing off operation will further aggravate the situation. It may also be noted that the rich farmers of Tamil Nadu are also now demanding such debt relief.

It may not now be possible for the concerned State governments to go back on their announcements and they may be left to face the consequences of their action. But other State governments should not follow suit. Further, the agitational method, which is being increasingly adopted by farmers in the past three years, should be firmly discouraged by the government. The integration of rural credit and reorganising it on commercial lines, with concessions only to the poor, are also urgently called for. What is basic is for the political parties to de-recognise the landlords as vote banks and to work for the improvement of the poor, who form the majority of rural population. Let not the slogan 'Jai Kisan' degenerate into 'Jai Kulak'. □

Reminiscences of my Association with the Planning Commission

T. N. Singh*

THE circumstances under which I had to resign from Parliament to join the Planning Commission as a Member on September 10, 1958, need to be mentioned before I refer to my experiences in that body and its functioning. One evening in the latter part of July 1958, I was suddenly asked by the Prime Minister's Secretariat to see Panditji at the earliest. When I met him the next day, I was greatly surprised to find that Pandit Jawaharlal Nehru wanted me to join the Planning Commission. All these years beginning from the Non-cooperation Movement of 1920-21 I had devoted myself entirely to political work and therefore I had to tell Panditji that this would mean a new turn in my life and I would like to have some time to make up my mind. I also told him that I had no experience of planning except that of actual work among the poor masses and that I knew something of their psychology and their needs. I was surprised with the reply of Panditji He said that he had tried to get economic experts and specialists for this work but they seemed to dictate terms to him Therefore he wanted a man who had been in close touch with the people and understood their psychology and desires.

While heartened by Panditji's words, as a political worker I felt very diffident in joining the Planning Commission and yet sought his permission for time to think over it, to which he agreed. My knowledge of economics was limited to what I had learnt in Kashi Vidyapith and later on what I had to write as a journalist on economic subjects I told my friend the late Lal Bahadurji, about Panditji's offer and also made no secret of my diffidence due to my lack of experience in the task expected of me. However, I could not make up my mind for nearly four weeks when I received a telephone call from Lal Bahadurji that Panditji was very annoyed to find that one of the young members of his own party had not responded favourably to his offer. Therefore Shastriji advised me not to delay any further and join the Planning Commission. Accordingly I met Panditji the next day and told him of my decision to abide by his wishes. Yet I suggested to him that before joining the Planning Commission I should go to my constituency in Varanasi on a week's tour to explain to the electorate my reasons for resigning from parliamentary seat. I went round my constituency and was very much touched by the affection I received from the electorate of my constituency during this short tour.

*Governer, West Bengal

Initiation

At the first meeting of the Planning Commission which was generally held twice or thrice a week in an informal way, Panditji did me an honour by presiding over the Commission. He said that he had come because there was on that day a new entrant to the Planning Commission family. The kind words which he spoke about me not only touched me but later emboldened me during my association with the Planning Commission to speak out my mind freely and frankly despite the accepted attitudes and commitments of that august body in the past.

One of the intractable problems of planning in India even in those days was the prospect of rising prices. India was importing wheat under PL-480 from the U S.A and it was possible to keep down the food grains' prices and that brought about a certain amount of price stability. At the same time I felt that our dependence on America for our very subsistence to such a large extent was not desirable and that our agriculture would not develop unless the farmer got a reasonable price for his produce Here started my first point of difference with my colleagues. During discussions on the question of holding the price line I suggested that without greater agricultural production we would never be able to achieve our objective of self-reliance and it would be possible only if the agriculturist got higher prices for his produce This would no doubt mean rise in price levels generally but agriculture was almost wholly in the private sector and they would invest more if they got a reasonable return on their investments. I pointed out that for industrial products we had a Tariff Commission which fixed remunerative prices for them. Why should not there be an organisation for this purpose for agricul

One of the very significant remarks he (Panditji) made is that without reaching electricity to the villages no scheme of rural industries could succeed.

ture also? According to me, a very large percentage of agriculturists was carrying on farming at loss and that agriculture in India was at that time one of the biggest gambles because of the vagaries of nature.

Iconoclast

Not only did I oppose the concept of holding the price line with food grains imports under PL-480, but I questioned many of my colleagues' assumptions and theories regarding input-output ratios and economic growth. This resulted in my being described by the Deputy Chairman Shri V. T. Krishnamachari an "iconoclast". This epithet was often repeated by my dear friend late Shri C. M. Trivedi whose affection I had the privilege of earning during my association with him in the Commission. This difference in approach in regard to the agriculture sector almost put me in a minority of one in the Planning Commission on many occasions. I discovered that it would be wiser and more tactful if I confined myself to my principal portfolio, namely Industry, Transport and Communications. Thus in a sense I did start badly in the Planning Commission but this difference of approach on certain points did not vitiate the friendly atmosphere in that organisation. It was a common practice with me after the usual informal morning meetings in the Deputy Chairman's room, to go to late Shri Trivedi's room where we were sometimes joined by Shri Vishnu Sahay and Dr. A. N. Khosla, over a cup of coffee In that meeting we often ironed out our differences to the satisfaction of one another, but the word 'iconoclast' stuck to me whenever my colleagues wanted me to modify my attitude or go slow in regard to particular economic issues.

Rural planning for five lakh villages with differing soils rainfall, climate and conditions requires micro-planning at state and district levels.

Rural Uplift

One of the issues that I raised, though agriculture was not my subject, was that there were villages which were very heavily populated and even the greatest miracle in agriculture could not make them get above the poverty line. I referred to my own village which had a cultivable area of only 400 acres and a population of 2000 persons to support. How could they ever, I asked, economically improve their condition? I once asked my friend Sardar Tarlok Singh who was then Additional Secretary (later a member of the Commission) and an erudite scholar with knowledge of people in the villages, to find a solution for such a village. Though he did not spell out any particular solution for that particular village, he promised to study the conditions in East U.P. villages where there was increasingly heavy population pressure on land. We all seemed to believe that adequate land reform measures, provision of easy credit facilities and inputs will make the agriculturist improve his lot. But a real solution was not so easy.

Rural Industrialisation

Once a very touching speech was made in Parliament by late Shri Vishwanath Singh Gahmari of Ghazipur in which he described, with tears in his eyes, the utter poverty and helplessness of the people in his constituency. Pandit Nehru who was then present in the House was very much touched and soon after asked us to take up the question of East U.P. villages and make an attempt to solve their problems. About that time Shri Jayaprakash Narain, backed by a famous British economist, late Dr. Schumactar, propagated the idea of rural industrialisation. We went into the question of improving the condition of the people suffering from the ills of heavy population pressure and small holdings in an intensive way. Sardar Tarlok Singh put in a lot of hard work in studying and organising this programme. On the basis of a paper written by him a conference of the Development Ministers and Chief Ministers of the States was held to consider the question of rural industrialisation. Panditji inaugurated it and one of the very significant remarks that he made and which I must emphasise here is that without reaching electricity to the villages no scheme of rural industries could succeed.

Such a planning (micro-planning) cannot bring succour to farflung villages because each one of them has its own peculiar problems. Therefore, I have slowly been forced to th concusion that while macro-planning will have to be done both at the Central and the State headquarters, micro-planning will have to be worked out at the village level.

Because of the challenge that I had posed to Sardar Tarlok Singh he also took up some villages for developmental work as a special case in Chandauli Tehsil of Varanasi district. He visited this Tehsil more than once and gave his idea of growth and related inputs to the villagers About this time, I had to join the Cabinet as Industry Minister, though I continued to be a part-time Member of the Planning Commission. Therefore I am not aware in any great detail as to what attitude the Planning Commission took on the findings based on the experience of Sardar Tarlok Singh. Whatever that be, the fact remains that these villages in Varanasi district have continued to be in the same state as in the past, except for th fact that as a result of an agricultural revolution brought about by agricultural scientists and introduction of high yielding varieties the condition of peasants and farmers has generally improved.

Since leaving the Planning Commission and the Ministry I have had some experience of carrying on constructive work in rural areas on behalf of non-official organisations. Therefore I think, I am now in a position to refer to some of the mistakes in our approach to rural development and I will be failing in my duty if I do not mention them here.

The first thing that I would like to state here is that the Planning Commission in Delhi at best can do some kind of micro-planning which by and large is bound to leave our villages untouched. Rural planning for five lakh villages with differing soils, rainfall, climate and conditions requires micro-planning at State and district levels. For this our planning methodology is more centralised than necessary. There has to be micro-planning at district and village levels with sufficient elasticity in regard to approach, room for adjustments and availability of financial resources. But on the contrary, the Planning Commission then used to lay down strict priorities for rural areas enforcing them by an elaborate system of matching grants from the Centre. This system of imposing priorities on lower levels discouraged micro-planning at the village level. Today I feel that if this kind of village to village approach had been made and greater elasticity provided at local levels the recent situation in planning with its frequent plan holidays would not have arisen. My recent experience of rural constructive work and my attempt to concentrate on the economic problems of those below the poverty line in the villages indicate that provision of the necessary inputs to them and opening up new avenues of useful employment at their doors can alone provide some kind of solution to our chronically poverty-stricken people in rural areas. The macro-planning at Delhi has produced little purposeful impact on micro-planning or for that matter even the States also indulge in macro-planning at their headquarters by dividing each sector's targets and resources district-wise. Such a planning cannot bring succour to far flung villages because each one of them has its own peculiar problems. Therefore I have slowly been forced to the conclusion that while macro-planning will have to be done both at the Central and the State headquarters, micro-planning will have to be worked out simultaneously at the village level and the leadership in this regard will have to be taken up jointly by the District Magistrate and local knowledgeable persons who are sincerely concerned with the lot of the people below the poverty line and who can subordinate their self-interest to the general good of the people.

Gandhiji's Approach

Gandhiji's approach that almost every poor agriculturist requires some supplementary work at his own door is as true today as it was fifty years ago. Such supplementary work should have as close relationship with the occupation of the agriculturist as possible—e.g., processing of the various agricultural produce, provision of assured water supply to the fields, availability of the necessary inputs and production of goods and articles with simple machines in cottage with some state organisation taking the responsibility of reaching raw materials, training and marketing facilities either directly or through merchants and industrialists. In other words, we will have to involve merchants and industrialists in the field of rural industries for marketing and raw material supply purposes. If they do not cooperate, Government or cooperative societies are the only alternative. Unfortunately our experience of Government marketing agencies, including various emporia and cooperatives, with some exceptions, has, not been very happy. But I find that wherever a band of selfless workers have joined in an unofficial endeavour to reach various facilities, including supply of raw materials, sinking of tubewells, marketing, etc., such attempts have succeeded. As a matter of fact, the dairy development by the Amul people in Mehsana in Gujarat has changed the face of entire villages in that district. Probably our hope lies mostly in an extensive programme of animal husbandry and fisheries including processing of milk products, hides and skins, etc., as well as production of items in cottages, for which purpose both raw materials and marketing facilities will have to be made available in an organised way.

In Varanasi district, in Bhadohi Teshil, almost every peasant-cultivator even with half an acre of land is well-to-do because of the widespread adoption of carpet weaving as a cottage industry. Poor people have to be saved from the middleman. Unfortunately, it has not been possible for the Government to create an organisation for this purpose. Even then these people are much better off as they, while carrying on agriculture, specialise in production of vegetables and carpet weaving. Mehsana and Bhadohi are example which can easily be initated in various other parts of India if only the organisation is left to a band of devoted, selfless workers who are members of well organised non-official agencies. The cooperatives in Mehsana and some of the work done by some devoted constructive workers in some villages in Bihar and Varanasi confirm me in this conclusion.

Cadre of Dedicated Workers Essential

I regret to say that my experience of developmental work in the villages had convinced me that the official machinery, however well equipped, cannot be a substitute for a cadre of dedicated selfless youngmen for real uplift work in the villages. The later have no doubt to be backed by the official machinery if they do well. The non-official workers on their part will have to eschew political ambitions. Non-official organisations with necessary finances and directed by a dedicated leadership will have to meet the economic needs of these rural constructive workers. The action programme will have to cover improved agricultural inputs, an enlightened animal husbandry programme with emphasis on improving the breed of cattle, industrialised exploitation of all the by-products and cottage industries on a wide scale supplemented by adequate marketing facilities. I am of the view that given a band of dedicated constructive workers; finance will ultimately not be a limiting factor.

In conclusion I would like to add that this approach will bring about active involvement of the people in the implementation of Plan programmes.

Probably our hope lies mostly in an extensive programme of animal husbandry and fisheries including processing of milk products, hides and skins etc., as well as production of items in cottage, for which purpose both raw materials and marketing facilities will have to be made available in an organised way.

SPECIAL ARTICLE

Poverty, Unemployment and Women The Linkages

Devaki Jain*

IT is not uncommon, to find Indian planners and economists, unable to separate, identify, accept the view that there is need for separately planning for the advancement of women within the overall planning for men and women. They can quite well perceive that women's needs are different from men's but this perception is limited to their needs as mothers, home makers and perhaps supplementary breed winners or secondary workers in a household. To this extent they are able to see the importance of extension of maternity services, nutritional and home science education, even perhaps Mahila Mandals to improve the competence of women as home makers and mothers.

This is not only a valid perception but a fundamental part of the perception of even the most radical supporters of women's pursuit of self-realisation and equality. It is biology and its consequences that form the basis for distinction between men and women, whatever from its expression takes—religious beliefs, cultural characteristics, economic roles or political prospects.

But the missing link is that the consequences of biology, go beyond biology. In other words women's access to opportunity and benefits both within the household|family and outside it are affected in all directions, economic, social, political. Neither are men and women equal and homogeneous around the boundaries of class—working class, occupational class, caste class, nor are they equal or homogenous within a household. Hence while the reasons for differential access and receipt of benefits may be biology, the issues and areas in which remedial action has to be taken are far flung.

The picture of this inequality—or dissimilarity becomes sharply clear when the focus is on the poorest in India. In a typical assetless, below poverty line household in India—rural or urban—all members of the family, men, women, boys and girls need to bring in some income, some wherewithal, mostly non-monetary food, fuel, whether collected from garbage cans, roads or trees or kitchens in return for some labour. In this typical household, however, the women and girls do something more, namely they cook and wash and clean and nurse. Frequently—it is the women's efforts alone that provide the basis for sustenance of these families.

Why? Either because the men have moved away seeking work, or the men find that the reward for the effort is not an adequate payment, so do not bother to make the effort at all, or because the men have used whatever little they have earned to purchase liquor.

Woman-Primary Bread Winner

Studies of percentage contribution to total household income, separate of male and female members of the family in many parts of the world, reveal that amongst the poor, women are the primary bread winners for their families, if not the sole supporters. Indian studies have revealed that in 35 per cent of poverty households the primary bread winner is a woman. This percentage increases with the increase in destitution: the ultimate in destitution being that household which has only adult women and children, being provided for only by the women.

Other studies have revealed the mirror image of the same phenomenon—namely that the income use or expenditure pattern of women, especially amongst the poor, is different from men's. Women first satisfy the survival needs of the family—food and water, shelter and then go in for supplementary items. Men on the other hand tend to value other items apart from food—whether they are consumer goods like torches and toys and clothing or liquor and entertainment. Hence from the side of household income use, women again become the primary supporters of the family's survival.

The linkages

Nutritional studies are revealing not only the well established habit of sequential feeding,—that there is a discrimination in the allocation of food between males and females within the family, the males getting the better food such as milk for the boys or more food; but a linkage between direct and indirect access to food crops and the nutritional standard of the family. The linkages work as follows:

If in a poor household, perhaps with access to a small piece of land, the crop grown is edible cereal-some grain or millet, then the output of the field is directly accessible to the women of the household-stored and controlled by women and used for the family. If on the other hand the field is used for cash crop such as sugar, cotton, tobacco etc., the crop is sold in the market and exchanged for cash. The cash in turn is exchanged for so-called household necessities. Most often this transaction is carried out by men and the quantity of food or access to it drops, other items are brought in with the cash sometimes even farm inputs. Studies have shown, that this kind of

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*Director, Institute of Social Studies, Delhi.

change in crop from subsistence crop to cash crop leads to a drop in the nutritional status of the family, amongst the poor cultivators.

Inequality in Treatment

In health it is a well-known, well-documented phenomenon that in households where resources are extremely limited and in situations where medical facilities are not easily accessible, whether physically or financially, the female children get scant attention compared to the male children. Kumudini Dandekar's study of the use of medical facilties in 6 backward districts in Maharashtra, reveals the startling inequality in medical treatment between male and female infants and children amongst the poor.

Leaving aside for the moment this bundle of material goods and services such as employment|wage, nutrition, health and, going on to access to intangible items such sources of knowledge, sources of communication, sources of social power, the situation is the same.

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A typical example is provided by the data collection system—whether official macro-surveys or intense micro-surveys done by economists or by other specialised institutions. The dialogue is between a "head of household" as a respondent and the interviewer or investigator. The head of household may or may not be the primary bread winner, may or may not be the oldest or most knowledgeable person in the house. It is usually a male, could ever be the eldest son or the grandfather. The interviewer is almost always a man except in the urban middle class scene where a Hindustan Lever or Nestle's and other such firms may be doing door to door canvassing for soap or tooth paste; vanaspati or coffee. The male "head of household" obviously can give most facts, especially regarding the number of persons in the household, their age, sex, ownership of assets etc., but when it comes to the information on who is doing what in the household he perceives much of the non-remunerative or income-substituting work of women and girls, as domestic work or of no importance. Because of the division of roles within the house he has no personal experience of the household needs—of the fact that the distance of the maternity or health centre is inhibiting or that lack of safe areas for defecating or urinating for women and girls has made them vulnerable to sexual violence, apart from other physical illnesses. He may not realise that lack of a place where the infant can be placed safely has not only made for physical hardship leading to sickness and mortality to the women and the children when she is working but has also led to the withdrawal of the young girls from the school, so that she can be mother's surrogate.

On the reverse side, not being exposed to such interviews the women and girls remain unaware of the kinds of the information that is being collected with an interest or with an intention of providing the basis for the direction of supportive services, whether it employment training or infrastructure and hence c in no way send up "messages" regarding their needs.

Voice of Women Ignored

In the village or in the slums, places of sociali tion, whether it is a village council, a trade union a common yard, a tea shop, a liquor shop, a sch or alyouth club—are all male reserves. It is here tl the opinion is exchanged, information picked up a perhaps even demands formulated. Visiting pers and agencies, government or non-government, pi up their information, even with the best of intentio from these formal and informal social formati which tend to be largely made up of men who in t have a limited perception of what goes on, behi the scenes in household work and laborious br winning, a female world.

Hence the up and down communication from hou hold, from class, from caste, from economic terest group, political interest group, whate does not contain the voice|mind|expression of wom half the population, performing a fundamental r with a fundamental difference from men, leading t fundamentally different set of perceptions of w society needs.

All these pictures of inequality between men women gradually get less sharp, sometimes totally distinguishable, as the economic base of the househ improves. Amongst the well-offs and educated clas this kind of inequalities, especially in access to hea and education if not employment as doctors, admi trators, clerks and teachers, do not exist. There may intra-household inequality, undervaluation of wom health and illtreatment and so on. But the quality this discrimination, the seriousness of its impact on very basis of existence, namely survival, is different t ween these classes. Hence it is not perceived by m men and women amongst the educated classes who in professions, positions of power as policy mak programme developers, politicians. They perceive Indian woman as traditionally secluded, unable unwilling to come out to participate in the econo activity, a supplementary bread winner, a per who needs social reforms, attitudinal change and so This certainly is the need for middle class women as elaborated earlier, amongst the critically poor survival kit is provided by the labours of the wo and the children, especially the girls. They are secluded, in fact they are pushed to participate in labour force at very severe costs. There is an inv relationship between landlessness and female par pation rates, the female labour force participa rates going even above the male participation rate backward, dry rural areas.

Implications

If this is the case, then what are the implicati not only for programme and scheme designers, only for data collectors but for those making cri and powerful investment decisions at the very to There are sectoral allocations—within sectors t are technological choices, within technology there organistional forms, within the organisaional fo

[illegible], and within these there are heirachies. In every one of these levels of decision making the individual woman within the poor household has to be the consideration. A choice of allocation between industry and agriculture would affect women different from men. Within an industry the choice between large scale and small scale production; within the small scale whether shed based or household based, within household based, self managed or "outside" managed, paid daily or fortnightly; in coupons or cash or food and so on. Why? Because certain sectors, certain technologies etc. have more use for women than others—rightly or wrongly. If right, it can be supported, if wrong, modified. But identification is essential and precedes action.

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Safeguards

Some immediate safeguards that can be built in by planners are :

(1) The household should not be the ultimate unit either for data collection or for the programme planning and implementation. It is the individual males and females within the household whose situation has to be clearly understood and programmes designed to reach them individually. This in no way suggests hostility or juxtaposing the male against female. It will in fact strengthen and bind the family. Relations amongst equals are stronger and more durable than amongst unequals. It will bring to bear on decision making, the needs of women as reproducers and home makers which in trun will improve the quality of their reproduction and their home making.

(2) The linkage between the economic roles of poor women and their work as reproducers and home makers is to be identified and relief given from some of the burdens thereby imposed—the most striking and unjust of which is death. Female mortality amongst infants below 5 and amongst adults in the reproductive age is higher than male mortality and this is a very abnormal Indian phenomenon. Studies of sex ratio observed amongst landless classes reveal the terrible truth that poor women die faster than poor men. It can only be inferred that they die because of the physical burdens imposed by their double role as bread winners—mostly primary—and bearers of children and tenderers of families.

(3) Many routes to reduce this burden suggest themselves, the most striking being the importance of extensive, well supported care services, distributed as seriously as it is intended to, as provision of drinking water, roads or primary schools. Simplification of access to water and cooking fuel may be an even more primary need than a secondary school, or health centre.

In a country with scarce resources, the problem is not only how much, *where*, but also *which first*. It is this timing, priority that is to be understood

The famous Chipko movement had always concentrated on the trees. Quite rightly, as the trees were guardians of the soil; they provided food, fodder and fuel which were even more essential to women than men. However, women who used to go to Chipko meetings in the U. P. hills raised the issue that while so much is being talked about trees, they were still walking miles for water. A group of women from Khuryet village, in Tehri block led a procession to the office of the District Collector with empty water pots on their head chanting that their children drank less water than the officers' children drank milk. The Block Development Office had prepared a plan in which piping water to their village was 19th on the list. They wanted it first because none of the other items could provide them the vital relief that this piped water could. Such is the need for reordering sequences.

(4) Identification of specific tasks within an "occupation" or production process; which bring remuneration—that is, tasks performed by females within the production of any one commodity, because of sex segregation of roles, can ensure that technological change does not wipe out this task and thereby the remuneration. Identification might lead to rehabilitation, if displaced; upgarding of techniques for improving productivity and so on. But identification is the first crucial step.

Discrimination in Payment

(5) Wages may have to be negotiated for these tasks rather than for the whole occupation. Just as in the textile industry there are different wages for different trades, in agriclture these differences are vast and need to be *reorganised*.

> **Studies of segmentation in the Indian labour market show not only that for the same tasks males are paid more than females but that for more vitally laborious tasks, females are paid less than males. For example for paddy transplanting the females work more critically than the males but they are paid less than the male supervisor.**

Studies of segmentation in the Indian labour market show not only that for the same tasks males are paid more than females but that for more vitally laborious tasks, females are paid less than males. For example for paddy transplanting the females work more critically than the males but they are paid less than the male supervisor. Similarly in tea, the female tea picker is paid less than the male labourer and so on.

(6) Unionisation may have therefore also to be segmented, so that female typed tasks could bid for higher wages.

(7) The importance of looking on sex specific technology within the broad classification of labour intensive|capital intensive has often been discussed. Since male and female tasks have been allocated on the basis of sex in many traditional sectors, those involved in employment and training for employment and productivity; those involved in decision regarding the choice of technology have to keep this additional breakdown based on sex if they are to prevent unintended adverse effects on one group or the other.

The report of the Committee on Women's Employment set up by the Planning Commission (1977-79) had listed those occupations in which female workers provided the majority of the total number of workers. These were found to be the least paid, most monotonous jobs but the fact is that they were the source of income, however meagre to women.

Technological transformation which does not heed to this pattern can push women out even of this meagre income, and what is worse, without it being noticed at all except by the woman themselves, since they usually do not have a strong voice in the unorganised casual labour zones. Weeding, for example, provides a low but important wage to almost all women landless labourers as a much sought after part-time activity. Spinning of yarn is another important provider. Use of weed killers as part of the modern technology of inputs removes this oportunity, apart from the ecological havoc it may cause. Studies are beginning to point out this phenomenon.

(8) Aparat from technology, the form of organisation whether it is a factory system of work or a put-up system of work it would still be exploitative to examine the option, especially as relevant to women, and if necessary opt for the put out system of home-bound productive work, with forms or organisation such as cooperative or trade union to prevent exploitation.

Employment Guarantee

(9) In public works schemes :—Administrative procedures, engineering norms, payment systems can all discriminate between male and female job seekers

On the other hand, if payment was made to individuals either on an output basis or on basis of hours worked, this in-built discrimination would not take place. Hence 'works' have to be selected which do not pre-suppose fixed ratios of male|female labour. Females must not only be allowed but encouraged to form gangs.

and always against the female job seeker. In a study made of the Maharashtra Employment Guarantee Scheme with special reference to the impact on women who participate in the programme, it was found that the works chosen for labour absorption are by and large P.W.D. and irrigation type works. These works are traditionally associated with 'light|heavy' work and consequently have predetermined rates of female and male labour management per day per work. Gangs of males and females are formed to match the norms, as set by the specific work'. If women are 'alone' or in an inordinately larger proportion of job seekers than men, it is possible that they may not be offered work unless they bring men with them. The Field Report has an instance of a widow not being able to find a place in any gang. She was sent away and later mobilised a gang of women and demanded work. Women, therefore, would register and report in much lesser numbers than the volume of unemployment would actually indicate ;

(a) because they are truned away and asked to come with men

While it may look very logical to suggest that the best way to break this circle is to release them from their economic roles, say improve the income of the male in the family, give a cushion of maternity and household services to the women, this does not release the trap. Because not only of a more radical view that in the role as reproducers, the woman is a producer of human capital and therefore has to be treated as one but also because of female and male behavioural roles and heirarchies already established.

(b) because knowing that a gang has to be mixed they would probably not even come, unles they had acces to a man.

The system of piece rate payment to groups woul distort distribution of wage within the gang. Th majority of the gangs are formed on the basis o village and 'caste'. This implies that extended ki usually form a gang. According to the rules, th payment for men and women should be equal. How ever, the payment is made on the basis of 'contri bution' and is traditionally at the discretion of th gang headmen, who tend to value women's contri butions at less than the men's. On the other hand, i payment was made to individuals either on an outpu basis or on a basis of hours worked, this in-build discrimination would not take place. Hence 'works have to be selected which do not presuppose fixe ratios of male|female labour. Females must no only be allowed but encouraged to form gangs, an payment systems changed to that of direct daily pay ment. More drastically, 'gang' formation could b abandoned and workers employed individually. Th payment system in the Nelamangala Block under th Karnataka Employment Affirmation Scheme is no based on gang formation, but weekly wages are pai directly to the workers on the muster rolls at th site offices. This may be a less pernicious system as here too it is reported that often men register the names for work, send the women to the site, and the come to collect the wages in their name. Oth aspects of the payment system are :

(1) weekly payment and
(2) coupon payment.

Weekly payment presumed weekly purchase c household needs or staying power for the week Coupons presume the nearness and use of the ratio shop for encashment. The majority of the women o the sites are assetless and needy. It would be diff cult to imagine them having stocks of food which gi them staying power for the week. In Karnataka, th office which distributes the wages also distributes th

food grains at the same time. Monetary wages are combined with the foodstuff, thus avoiding the use of ration shops or coupons.

The Solution

There is clearly a very vicious circle in this phenomenon of women and poverty and unemployment. Women are clustering in the poorest paid, lowest skilled, least regular, most marginal, most arduous jobs in the economy. But they are clustering in these corners because of the constraints imposed upon them as women, i.e., as those responsible for reproduction and nurturing of the family. Their productive roles are given scant attention because they are clustering in these low value jobs.

While it may look very logical to suggest that the best way to break this circle is to release them from their economic roles, say improve the income of the male in the family, give a cushion of maternity and household services to the women, this does not release the trap. Because not only of a more radical view that in the role as reproducer, the woman is a producer of human capital and therefore has to be treated as one but also because of female and male behavioural roles and heirarchies already established. Women's withdrawal from conventional economically gainful activities as a result of moving up of the social and economic ladder has not necessarily led to an improved perception of her value as reproducer. She is perceived only as a parasite. She loses access to the most vital processes and linkages with power. She loses also on home-ground. The poor women as well as women from the Schduled Castes and Tribes realistically do not see such a solution as their desired goal. They would like to preserve their economic identity but have far greater support for their household and reproductive roles.

This is the vision for women, and it is this perception that has to be perceived by the policy makers, planners and economists. □

Letters

'Useful Yojana'

Sir,

I have before me July 1, 1980 issue of your nice publication—*Yojana*. It is meticulously edited and the language employed to convey the ideas is in popular vein.

The get-up of this publication is highly impressive. I pray for the prosperity of your publications

Being a University Teacher, I am a voracious reader of such useful material.

Yours etc.
Prem Chand Dhiman
Assistant Scientist,
Directorate of Research,
H.A.U. Hissar-125004.

Handicapped Penpals

Sir,

For the International Year of the Disabled to be observed next year, I am preparing a Penpals' Directory of the Handicapped. Those among your readers who might wish to avail of this opportunity may contact me directly at 57C, Ballygunge Circular Road, Calcutta-19. They should mention their age, sex and hobbies. All those who respond will receive a free copy. It is absolutely free, and there are no obligations whatsoever.

Yours etc.
Mrigank Kocher

Hard Earned Money

Sir,

I have gone through the article "The impact of Gulf money on the Kerala economy" published in your issue dated June 1, 1980. You have rightly commented the way the deposits aggregating to Rs. 400/500 crore every year being squandered without putting into productive use in Kerala. It is true that investment on lands, residential construction and hoarding of gold will not give productive results whereas if such large amounts are invested in industries they would fetch attractive returns apart from employment potential in the State. All these will require a national, devoted and forward policy of the State Government. At present those in authority while talking too much on industrialisation, the prospects and promises in Kerala, know very little of what it means and what realistic approach they have to make if a climate is to be created for investment in the State. Even the State Government have recently admitted that out of 12000 registered industries 8000 are sick. In the absence of any positive contribution from the Government to see to the basic causes of such sickness and take remedial measures the situation will not improve. We only hear on the All India Radio of proposed investments in new industries. It is purposeless to invest in new industries when old industries cannot be properly nurtured. These new industries also will go the same way as old industries. In the context of the above real situation, you do not expect the Malayalees who have earned with hard work some money to invest in public enterprises which they are sure will be closed down in no time. Their only hope is in investment of the money either in buildings or in gold which will fetch some relief to them if they are put to distress after some time on return from Gulf countries. Unless the State Government and those controlling the Government talk more meaningfully and really get involved in the prosperity of the State very little progress can be expected in the State with a high percentage of literacy, high fertility of soil and very skilled craftsmen with a high reputation for their devotion to duty.

Yours etc.
M. K. R. Menon
Retd. Chief Engineer (P&P)
M.P. Electricity Board,
Consultant (Power) Ministry of
Energy, Punithura, Kerala.

8DPD/80—3

Women : Working Against Odds

Kamla Mankekar*

THE fact that 94 per cent of the 90 million women workers in India are in the unorganised sector of economic activity and hence are not covered by protective labour legislations is an index of the conditions of work for women in the country.

Roughly, three-fourths of the total number of women in the country's work force live in the villages. These include agriculturists, farm labour, those engaged in cottage industries, crafts, animal husbandry, and poultry farming and others working at construction sites of dams, industrial plants, irrigation projects, roadways, etc. The remaining 26 per cent cover all other venues of employment—educational institutions, health services, factories, professions, commerce, communications, offices or private and public undertakings and departments of Central and State Governments.

The Planning Commission in its earlier draft of the 1978-83 Plan, has observed that just as laissez faire in the labour market has discriminated against Scheduled Castes, Scheduled Tribes and other weaker sections, it has also discriminated againt women. Discussing about women working against odds, the writer feels that discrimination against women is not merely a battle between the sexes, it is a struggle for human dignity and social justice.

This discouraging profile of working women is made even gloomier by the acute unemployment and underemployment prevalent among them. Though women constitute about 33 per cent of the labour force in the country, they account for 40 per cent of the total unemployment. According to a study by the Indian Council of Social Science Research (ICSSR), in the non-agricultural sector the number of women workers declined from 9.3 million to 6.3 million in the decade ending 1971. The number of men workers during the period increased from 32.8 million to 48.4 million. The Planning Commission, in its earlier draft of the 1978-83 Plan, has observed: "just as laissez faire in the labour market has discriminated against scheduled castes, scheduled tribes and other weaker sections of the population, it has also discriminated against women".

Rural Women

Another ICSSR study indicates that while the country has launched various socio-economic development programmes, women have not only been left untouched by their benefits, but "their position has registered an opposite trend." Take the case of rural women workers —cultivators as also the landless labour. Farm women contribute about 36 per cent of the total employment in agriculture, yet they are responsible for 60 to 70 per cent of agricultural operations including sowing, transplanting, harvesting and storage of farm produce. But officially they are not recognised as 'workers'; they are listed as dependent housewives. One reason for this curious classification may be that, as of 1973, 45 per cent of the total working women were unpaid helpers in family farms or allied activities. Consequently, they are not eligible for benefits like loans for farm equipment, fertiliser, dairy cattle, etc. These facilities are extended only to male farmers. Similarly courses conducted for better methods of farming are for men only. Women who have traditionally tended milch cattle, are not admitted to milk cooperatives. A classic example is the Gujarat Milk Producers' Cooperative. Women feed and tend the cattle and take the milk to collection centres; but they are not admitted to the producers' cooperative.

According to one computation, 84 per cent of the women workers in the unorganised sector, are in agriculture. But they have lost their hold on many agricultural functions If modern methods of farming have made these easier, the change has pushed the women workers to the background. It is only the men who learn to operate machines like harvesters, tractors and tubewells. At a recent seminar in Rajasthan peasant women complained that, though earlier their help was sought to irrigate fields, now with the advent of tubewells, they were kept out of that job. "Men push the button to start the motor and sit smoking and gossiping; they forbid us to even touch the machine saying we will spoil it." In the absence of work participation, women have lost the status of earning members in the family. "Our only function now is to produce children" they say. The female work participation declined from over 33 per cent in 1911 to 28 per cent in 1961. According to official estimates, it is stagnating at around that level. But independent researchers contend that it has declined much further in a continuing trend.

Leading Journalist, specialising in social development Problems

Women from the landless labour force are the most exploited among workers. Their wages are 20 to 40 per cent less than those of men. This should be seen against the fact that the Minimum Wages Act is, in the present circumstances, impossible to be applied to the unorganised sector and the actual wages fall far short of the statutory minimum. No welfare or protective rules govern their conditions of work. Often, economic pressures compel these women to return to their back-breaking tasks within days of childbirth. There are no maternity centres, no creches, no child care services to help them.

Due to social constraints, women seek work nearer their homes and are the worst sufferers at times of flood, drought and famine. While the menfolk migrate to cities and other centres of work, women have to stick around their homes with their children. Unprotected and in acute economic distress they are exposed to social exploitation by those who dole out petty ca ual employment to them.

In Organised Industry

In organised industry, as wages and working conditions have improved, women have been eased out of the jobs traditionally held by them. This has happened in the textile and jute industry and in mining areas. In the last two decades, the number of women workers has declined by 30 to 60 per cent in these sectors. However where wages are low and conditions of work poor—as in the case of bidi rolling and agarbatti making—women constitute 50 to 60 per cent of the total workers. In crafts, women are paid a pittance for beautiful handiwork which traders and contractors sell at fancy prices in city markets Among such exploited groups are the gota and sequin embroidery workers of Rajasthan, "chikan" embroidery workers of Lucknow, brass workers of Moradabad and glass bangle makers of Ferozabad. Underpaid, underfed, and living in miserable hovels, these women workers are easy victims to health hazards and die early deaths.

Many of the new industries—pharmaceuticals for instance—employ women as casual labour and thus cheat them of their due rights like provident fund, leave and medical facilities. The industry's contention is that women workers with provision of maternity leave, creches for workers' children etc., prove expensive. This is however not proved by statistics. Labour Ministry records, for a recent year, showed that of the 1.73 lakh women factory workers only about 3,800 claimed maternity benefits costing about Rs. 4 lakhs —a negligible sum by any standard.

In the services, women's share ranges from 7 to 10 per cent. The Indian Administrative Service has 260 women out of its total strength of 3,884. In the non-governmental sector, only 2 to 3 per cent women hold executive posts, the rest work in the lower rungs as typists, clerks, receptionists, telephone operators, etc.

The share of women in the organised sector may have increased marginally in recent years, but it is still only about 12 per cent. There is hardly any improvement in the private sector. The proportion of women job-seekers at the employment exchanges is rising over time. Proportionately, there is more recorded unemployment among educated women than educated men.

The Future

It has been noted that even when they secure employment women stagnate in their jobs ; they are not "ambitious", it is said, and they do not strive for advancement. However women workers have their own side of the story to tell. Almost all of them shoulder dual responsibility—of home and work-place. That leaves little time or energy, for effort in career promotion or professional pursuits. Working wives frequently have no control over their earnings—their salary cheques often go to the husband's bank account ; that kills the incentive to earn more. Securing job promotion sometimes means submitting to various demands of a senior officer, which many refuse. Discrimination against women workers is not only at lower levels ; women administrators are generally given less important departments ; recently a senior woman diplomat threatened to seek legal intervention for having been denied the position due to her.

In the next three or four years some 10 million more women are expected to enter the labour market. This would be in addition to the existing level of female unemployment of 7 to 8 million. If conditions of work for women are not improved now, the problem soon would become unmanageable. The level of their training must be raised to make women valuable, useful workers ; existing labour laws should be enforced rigidly. So far trade unions have ignored women workers' needs and problems. This only shows that women must organise themselves to fight for their rights. They need national and international assistance of women's organisations, government departments and international agencies. Discrimination against women is not merely a battle between the sexes; it is a struggle for human dignity and social justice. □

New Fuel for Tractors

IN Schleswig-Holstein, in the north of the Federal Republic of Germany, a farm tractor is being run not by pure diesel oil, but rather a very special kind of mixure : 40 per cent normal diesel oil, 40 per cent rape oil, 19 per cent water and 1 per cent a so-called emulsifier, a substance which binds the other ingredients together. The scientists at the Institute for Agricultural Process Technology, Kiel, in cooperation with experts from a German University, developed the fuel recipe whose high percentage of water (evaporates explosively in the combustion chambers of the motor) provides for more thorough fuel combustion. In the tests now being conducted with the experimental tractor and a stationary five h.p. diesel engine, the bothersome carbon and resin deposits have not occurred and engine performance is satisfactory. However, further long-term experiments will be carried out. The powerful 85 h.p. engine pulls heavily-loaded trailers on the experimental farms of the University of Kiel's Department of Agriculture, and is used by workers around the farm buildings, in the fields and in the forest to pull various different kinds of machines.

Courtesy *"German News"*

For Export-Aided Economic Growth

L. K. Jha*

THE promotion of exports has assumed a special importance for us in the ensuing decade. In the '70s our foreign exchange reserves were rising even though we had an adverse trade balance, because remittances made by Indians working abroad were running at a high level. However with the steady and repeated increases in the prices of oil our reserves have begun to decline. A special effort has to be made to step up our exports.

Raising the level of our foreign exchange earnings is, of course, of paramount importance, but exports have to be viewed from other angles as well, specially from the point of view of their impact on the domestic economy. Countries like West Germany and Switzerland have no foreign exchange problem as such. Yet they continue to nurture their export trade in every possible way There are many countries, whose whole growth and development have been strongly and most favourably influenced by their dominant position in the export trade Great Britain in the 19th century, Japan in the present century, and Singapore and South Korea in the last quarter of the century are outstanding examples of countries, which have built up their prosperity by developing exports.

The priority which has been given to import substitution over export promotion so far it appears has been overdone. Since the bulk of our poverty-ridden population spends such little income as it has on indigenous rather than imported goods, most of the consumer industries, which were developed and promoted in order to replace imports, cater to the rich rather than purvey to the poor. Furthermore although we have, in a physical sense, a vast market, if we take into account the area and population of India in economic terms, if we take account of the low income levels, our market is very small Most of the industries set up under the import substitution drive are uneconomic, because the scale of production is much smaller than capital-intensive industries need in order to be economic. Further, because domestic demand is low, either we have had to allow only two or three firms to enter a particular field of promotion e.g. automobiles so that competition is virtually absent, or else in an attempt to have a number of units dispersed all over the country, we have ended up with small, high-cost units. From the point of view of the consumers, either approach has meant higher prices and poor-quality products. The capital investment per unit of output in most of these industries has tended to be high and their employment potential has been low.

If instead of focussing attention on the limited local demand we had explored the possibility of establishing industries on a large enough scale to be truly economic and boldly exploited overseas markets for them, we might have had more of industries whose products are as good and as cheap as any that could be imported, and which would not have been clamouring for a ban on competing imports to ensure their survival. Foreign exchange-wise, each such industry would have generated the earnings with which to repay any foreign credits that might have been utilised to set them up.

Such an endeavour would be rewarding from the point of view of the domestic economy in more ways than one. The changes are that the industries in which we are likely to be fully competitive in the world markets would by and large be labour-intensive in character. Therefore they would help generate more employment opportunities per unit of capital invested than they have been doing in the past. Also when we have industries of this nature, they would be low-cost industries and the creeping inflation in the economy which has been the result of most of our industries having high production costs, unable to survive except behind the protective shelters provided by high import duties and import bans, will also become a thing of the past. An additional advantage would be that we would not be confronted with periodic shortages of one thing after another. Since domestic production would, under such a pattern of development, be well in excess of domestic consumption, if internal demand picks up, either because population is rising or because income levels go up, a slight slowing down of exports will provide a cushion to keep prices stable and also a signal to step up investment in order to produce more.

The problem of increasing our export earnings in the '80s is going to be more serious and challenging than ever before. It would therefore be necessary for us to think of setting up industries, which would be almost wholly concentrating on export markets. The opportunities for doing so are much greater than is generally realised. Some of the developed countries are finding that their cost of producing certain items for which they had been famous in the past is too high because of rising wage levels. They are deliberately looking for developing countries, which could produce those goods or some of their key components, which they can then use not only for their home markets but also for world markets. Let me illustrate the point by a few examples.

The priority which has been given to import substitution over export promotion so far it appears has been over done. Since the bulk of our poverty ridden population spends such little income as it has on indigenous rather than imported goods, most of the consumer industries, which were developed and promoted in order to replace imports, cater to the rich rather than purvey to the poor.

*Eminent Economist and Governor, Jammu and Kashmir. These are excerpts from his Convocation Address at the Indian Institute of Foreign Trade, New Delhi on June 6, 1980.

Germany used to be the leader in the production and export of photographic apparatus and equipment. After World War II Japan became the dominant exporter of cameras, lenses and various allied equipment, taking advantage of its lower wages. Some of the best known German manufacturers are therefore getting well known German brands of cameras manufactured in places like Singapore, while some of the top most German photographic firms have joined hands with Japanese manufacturers to market cameras, some components of which are made in Germany and some in Japan. Thus a combination of excellence and lowest possible costs has become possible.

The automobile industry in the USA used to face powerful competition from some West European manufacturers in the immediate post-war period. Today both of them are facing severe competition from Japan. South Korean competition is also on the horizon. In order to retain their competitiveness, American manufacturers have begun to farm out the production of a whole range of automobile components to low wage countries, which are then shipped back to them for assembly and used in the finished vehicles. Unfortunately, India, which has not only a vast reservoir of labour, which is skilled and efficient, and which has also a fairly high level of competence in manufacturing products requiring high technology, has not tried to tap this potential in any significant way. The cameras which are made in India with German collaboration are relatively simple products meant primarily for sale in the country.

We run grave risks by continuing to depend on the exports of so many traditional items of which we have a surplus simply because our domestic consumption is so low. A slight increase in the per capita consumption of things like cloth and tea can absorb all our exports of these two key items. The point is best illustrated by looking at the trends in our trade of products like oils and oilseeds as well as sugar. At one time we used to export huge quantities of oilseeds. Then we switched to exporting oils and oilcakes, as we expanded the capacity to crush our oilseeds. And as the consumption of vegetable oils increased with the rise in population and a marginal improvement in consumption standards, we have turned into importers. In sugar, within the last few months we have had a somewhat similar experience, becoming an importer rather than continuing as a major exporter. Unless therefore we make a determined effort to set up new industries, whose prime purpose will be to sell abroad rather than in the country, the dangerous trends now manifesting themselves in our balance of trade cannot be curbed or reversed.

Such an effort would have a favourable effect on employment. One of the reasons why countries which have no foreign exchange problem continue to concentrate on exports is that they generate employment. For us the creation of new job opportunities is hardly less important than the earning of more foreign exchange.

The impact of exports on prices is usually unfavourable. Exports reduce the availability of goods in the economy. Unless they are compensated by the import of goods, which are even more urgently needed, there is a danger of a price rise. The setting up of industries which are earmarked for exports would mean that exports would not lead to a reduction of domestic availabilities

For export industries, provided they are sound and economic and carefully chosen, we can afford to utilise external capital on commercial terms whether they come from the financial institutions of developed countries or from multinationals or directly from the countries which are running surpluses. An export industry should generate more than enough foreign exchange to meet the payments which foreign capital may necessitate by way of interest charges, dividends or amortisation. Indeed the Soviet Union has made some excellent arrangements with some multinationals, which bring in their capital, technology and management, payments for which are made in the shape of a guaranteed offtake of some of the products which become available as a result of the investment This is a possibility we must explore To the extent that we succeed in doing so, we would step up growth, increase employment without adverse effect on prices, and also strengthen our foreign exchange position □

Tips to Transporters

THERE are a number of ways in which diesel and petrol economy can be achieved by transport owners but the single most important factor in what must be a massive effort would be the individual behind the steering wheel. Trials, for instance, have shown that sensible driver, could save 20 to 23 per cent diesel in competition with a reckless driver, both driving the same vehicle over the same route.

A fuel consumption conscious transport owner or driver is all the time aware of critical maintenance areas and gives due attention to them. He avoids spillage, checks leakages and uses recommended grades of lubricants. He maintains correct tyre pressure because underinflated tyres lead to 10 per cent higher fuel consumption. He also sees the air cleaner dirt free, uses good quality filters and ensures complete consumption and power flow through proper engine-tuning. His brake shoes and clutch liners are not worn out, nor is his engine which gets overhauled when it has grown weak. He avoids sudden, jerky or fast racing starts. He does not race along in low gear to consume 25 to 40 per cent more fuel; nor does he overburden the engines by driving in higher gear at slow speed.

The efficient driver does not use his clutch pedal as a foot rest thus preventing full power from flowing to the wheels. He also does not use the clutch to hold the vehicle on a slope. Both these practices help him consume less fuel and also save his clutch plate from wear and premature failure.

A conscientious driver does not imagine that he has entered a cross-continent Grand Prix; he drives steadily between 45 to 60 kilometres per hour to achieve optimum fuel economy and to ensure safety of the commuters and goods. Very sensibly he anticipates obstacles and stops, uses brakes sparingly and is averse to sudden spurts of speed. He avoids idling (an idling engine can consume upto two litres of fuel per hour) and would switch off at stops of more than a minute provided he has kept his battery, starter and dynamos in good condition. □

Debt Servicing In India

Dr. Shyam Nath Nandkeoliyar*

DEBT servicing refers to the payment of that foreign assistance which comes in the form of loans burdened with interest and conditions of payment. As the developing countries are not equipped with all the resources, particularly capital, which has a predominant role to pay in the development they have to seek assistance from other countries in order to provide facilities to their developmental programmes. The debtor countries have to serve the loans to creditor countries. Larger the loans a country requires, grant remaining less or negligible, higher will be the debt servicing responsibility.

Thus, this increasing burden of debt servicing converges to necessity of aid and responsibility of its payment. In other words, problem of debt may be large, but if the capacity to pay is not high, this problem will shatter the whole of the economy in the grip of steady development and purpose of debt will be defeated. But if the capacity to service the debt is high, the problem of debt encounters no valuable importance save and except putting the economy to irksome responsibilities. It does never mean to say that if the capacity to repay is high, debt be preferred at any limit. In such a situation, there not only lies the exploitation of the country resources rather destroys the political and economic set up of the country and keeps the economy very far from the goal of self-footing and self-sufficiency. Thus, so far the initial stages of development is concerned, it (aid) may be preferred and with the growth coming to the economy, the reliance on it be go on diminishing. Foreign aid may be a temporary cure of the illness of deficiency in the development but it may not be a permanent cure. The permanent cure lies in the internal enthusiasm of resource utilisation or in an outstanding strategy of increasing trade.

It has been a common feature of the Indian economy since the very inception of the Plan to welcome foreign assistance. Even the planners' advocacy of zero net aid failed to survive in practice. Economists considered the necessity even for future development. Only one improvement came to the light that is 'attempt of reducing the magnitude of aid'. But even this reduction is not going to bring a healthy environment in India's development. The assistance taken earlier are yet to be serviced. Under the circumstances, continuation of aid is necessarily to bestow severe strain upon the economy. Because, the aid or the debt-repayment due to its conditions enlarge the problem. It should be noted that the total debt servicing has increased from Rs. 3.8 crores in First Plan to Rs. 820.7 crores in 1977-78.

*Lecturer in Economics, R.R.S. College, Mokameh (Patna)

Magnitude of Aid

The overall external assistance authorised upto 1977-78 to India was Rs. 17,790.2 crores. Of this, the amount utliised was Rs. 15,145.1 crores. This shows that India has a high absorption capacity because of large needs of foreign aid. Of the total authorised external assistances which comprise loans and grants of Rs. 17,790.2 crores, Indian government has taken largely from International Development Association (i.e. more than 20 per cent), U.S.A., England, West Germany, IBRD, Japan, Canada and others. In 1978-79 alone, external assistance authorised is Rs. 1760.88 crores greater than 1976-77 and 1977-78 of which Rs. 508.21 crores has been utilised upto 30th September, 1978. In this authorisation, the highest was made by I.D.A. Rs. 969.17 crores and lowest by Belgium Rs. 9 27 crores.

Share of Grants

Out of the total extenrnal assistance, the share of grants amounts to a very small proportion. While the share of grants in total external assistance was 34.8 per cent in the First Plan, it reduced to 1.8 per cent in 1972-73. Recently, the share of grants have increased to 15.4 per cent in 1976-77 and further to 22.3 per cent in 1977-78. Of course, this increasing tendency is helpful in reducing the burden of debts, but the share of loans are still so high that the debt problem cannot be said to have eased much. Of the total external assistance upto 1977-78, loans comprise 91.3 per cent and grants only to 8.7 per cent. This needs no verification as to heavy responsibility of India in servicing debt.

So far as the initial stage of development is concerned, aid may be preferred and with the growth coming to the economy, the reliance on it would go on diminishing. Foreign aid may be a temporary cure of the illness of deficiency in the development. The permanent cure lies in the internal enthusiasm of resource utilisation or in an outstanding strategy of increasing trade.

Share of Tied and Untied Credits

Tied credit depreciates the value of aid by imposing the restriction on aid receiving country of its use. This is of two types . project tying and purchase tying. In first, aid is to be utilised in specific projects whatsoever the importance of that project in a country may be and in second, purchases are to be made from donor

countries whatsoever qualities they offer and whatever prices they charge. It has been generally found that in purchase tying, donor countries charge high prices.

In India, the share of tied credits in the First Plan was more than 83 per cent, though it has decreased to about 45 per cent in 1976-77, but again increased to more than 67 per cent in 1977-78. Of the total external assistances to India upto 1977-78, a large proportion i.e. 72.3 per cent is tied aid and 27.7 per cent is untied aid.

The problems of debt facilities put severe strain upon the economy due to unfavourable mode of repayment of loans. It dwindles the goal of development if the loans are to be paid in foreign currencies. It helps the development of the economy if foreign exchange is saved and loans are made out of domestic currency.

Interest Payment

The interest payment on external loans has been very much high in India due to high interest charged by donor countries. While it was only Rs. 13.5 crores in the First Plan, it increased to Rs. 860.8 crores in the Fourth Plan. In other words, while the interest payments in 1973-74 was Rs. 195.9 crores it has increased to Rs 260.1 crores in 1977-78 and expected to increase to Rs. 290 6 crores in 1978-79. This shows that interest payment have increased very much from first plan to 1977-78, which have extended a high-pressure on the Indian economy. As the present exchange resources have increased much particularly in 1977-78 from Rs. 2863.0 crores in 1976-77 to Rs. 4499.8 crores, and the donor countries have taken the attitude to lower down the rate of interest, it is expected that in future, payment difficulties will create less burden.

In the Third Plan, the average interest rate has fallen from 4.4 per cent to 3.4 per cent. The new loans of the USA have interest rate of 2.5 per cent, British loans have become cheap and recently given loans free of interest. West Germany has reduced their interest in 1975-76 on loans given to India. But still, many of the countries charge high interest rate e.g. East Europe charges interest 5.5 per cent IBRD charges 4 to 6 per cent interest.

Maturity Period.

The longer the maturity period of loans, the less the burden to debtor countries, and the shorter the maturity period of loans, the higher the burden to debtor countries. The maturity period is the duration of the time in which loans have to be paid.

It was during the Third Plan, that the maturity period of loans to India had normalised to some extent and the maturity period to loans had increased from 10-20 years to 13-23 years. The British loan given recently have a maturity period of 25 years. Still a large proportion of external loans are having a short maturity period, which exhort the responsibility of payment with a hard recourse.

Mode of Repayments

Again the problems of debt facilities put severe strain upon the economy due to unfavourable mode of repayment of loans. It dwindles the goal of development if the loans are to be paid in foreign currencies, simultaneously, it helps the development of the economy if foreign exchange is saved and loans are made out of domestic currency.

It is heartening to note in this context that in India, a large proportion of loans are repaid in foreign currency and very little percentage in domestic currency. The percentage of repayment in domestic currency is less than one per cent of total external assistance.

The above analysis clears the picture of problem of debt repayment of India. The need of aid in India is so large that in spite of the problems, it is facilitated It shall be highly fruitful at this juncture even to clarify the repayment capacity of India. The face of capacity to repay is very dark. The features of capacity to repay entirely depends in the long run in domestic savings, taxation, national income and in the short run on export earnings. It has been conceived by its analysis that debt repayment imposes severe strain upon the economy in the short run as well as in the long run But in the short run, as the pressure is heavily upon the export earnings, it inhabits a healthy growth of economy.

In analysing the capacity to pay, we find that in 1977-78, debt services as percentage to national income was 1 8 per cent and tax revenues 4.8 per cent. In 1975-76, debt services as percentage to domestic saving was 6.8 per cent. So far debt services as percentage to export earnings are concerned, it was about 24 per cent in 1973-74 but reduced to 15.3 per cent in 1977-78. This reduction is due to the fact that export earnings have increased more than double in 1977-78 in comparison to 1973-74 but the ratio of debt servicing has not increased in that proportion Thus we find that whereas in India, absorption capacity of aid is large, repayment capacity is very low

The greater dependence upon aid will aggravate the situation further and foreign exchange reserves will divest towards meeting the debt obligations which in no way is contributory to the economic development of the country and potential for the economy. Thus in the face of growing development of the country, it shall be desirable to expand trade with the innovations and utilisations of domestic resources.

This low repayment capacity not only enlarges the burden of repayment out of the growth resources of the economy but also help in reducing the volume of flow of external assistance.

Recently some donor countries have adopted the policies of debt relief particularly as a result of Ninth

(Contd. on page 20)

Plastics Industry's Role In Country's Economic Growth

Nageswara Rao*

THE vast economic potentiality of plastics industry as compared to other metal industries is the highest incentive for a developing country like India which is striving hard for rapid industrialisation in its planned economy. For setting up plastics production facilities lesser investment is required in addition to the greater levels of economies of production as compared to the setting up of metal production facilities. The industry also requires lesser energy. energy requirement for production of plastics is only one sixth of Aluminium, one fourth of copper and one third of steel.

Accordingly by going over from metal to plastics, the country will achieve higher employment potential at lower investment, lower energy consumption, lower foreign exchange requirement and higher level of sophistication in the quality and type of products. It can also effectively replace non-metals in many household applications not to speak of its use as industrial components. It is estimated that our annual imports of non-ferrous metals are of the order of Rs. 160 crores and even on a conservative estimate, if even 40 per cent of the use of non-ferrous metals could be substituted with plastics, the country would save enormous amounts in foreign exchange.

The industry has sound export potential also. As a revenue earner, it has earned more than Rs. 100 crores during the last three years by way of export. It has been able to make substantial contribution to exchequer by way of excise duty, sales tax and customs duty.

Versatile Material

In present day world, plastics are regarded as immensely versatile synthetic materials which can be shaped into numerous varieties of articles. These products find important applications in agriculture and rural areas. By using mulch films and drip irrigation process, following advantages may be obtained :

(i) reduction of 50 per cent in frequency of irrigation.

(ii) help to irrigate additional land.

(iii) help to increase yield by as much as 20 to 80 per cent depending upon the type of drop.

(iv) optimise use of scarce fertilisers.

(v) use in the lining of water courses, storage tanks, canals and reservoirs.

(vi) aid in seepage control, loss from which has been estimated approximately half of the water stored|transported.

(vii) also provide soil sterilisation and better grain storage facilities.

Plastics can play a usefull role in priority sector particularly in defence, railways, power cables, explosives, pharmaceuticals, pesticides and telecommunications. The HDPE and PVC pipes and tube-well systems are much useful in the present situation of India for providing filtered water to the rural people residing in 6.5 lakh villages in a short span of time with lesser investment as compared to scarce and costly G. I. pipes. This will make a tremendous impact on the health longevity and prosperity of the rural population.

Employment Potential

As regards employment potentiality the most conservative estimate for processing plastics raw materials is in the ratio of three persons for one ton of raw materials as direct and indirect employment. During 1978 the total consumption of raw materials for different plastic products was four lakh tonnes which will rise to 9,58,000 tonnes in 1983. At present the industry has been providing employment to nine lakh people and it will be able to generate employment at a higher rate in the years to come when unemployment will be the most embarassing problem in our country.

The industry do not require either proper climate for setting up manufacturing units or demand any centralised place. The manufacturing units can be set up at any place. The production units are much localised in western region due to adequate provision of infrastructure facilities. It has the bulk of the consumption of raw materials approximately forty five per cent while in the eastern region there are about two thousand units employing one and a half lakh persons consuming about forty eight thousand tonnes of raw materials i.e. 12 per cent of the total consumption. The consumption pattern of raw material in the northern region is twenty five per cent and the rest eighteen per cent is in the southern region.

During 1978 the total consumption of raw materials for different plastics products was 4 lakh tonnes which will rise to 9.58 lakh tonnes in 1983.

The industry has also been able to develop larger number of entrepreneurs as compared to any other metalic industry. There are about ten thousand manufacturing units spread all over the country, ninetyeight per cent of which are in the tiny cottage and small

*Lecturer, Department of Commerce and Business Administration, Allahabad University.

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scale sector whose capital investment varies from Rs. 5000 to Rs ten lakhs providing employment to approximately one million people with a total investment of Rs. 400 crores. The average investment per unit is only Rupees four lakhs which is much lesser than any other metal production unit. The average employment per unit was ninety with a little investment of Rupees four lakhs. It is according to the needs of Indian planners whose main aim is to achieve a higher rate of economic growth with lesser investment and abundant employment potential.

There are about 10,000 manufacturing units spread all over the country, 98 per cent of which are in the tiny cottage and small scale sector whose capital investment, varies from Rs. 5000 to Rs. 10 lakhs providing employment to approximately one million people with a total investment of Rs. 400 crores.

Tool of Economic Development

The Government of India must be conscious of encountering the problems faced by the industry so that Indian planners and policy makers may use this industry as a tool of economic development in a very effective manner. The problems are as follows .

1. The multipoint sales tax on plastics is disadvantageous both to the tax payers and to the Government Small scale units with little administrative set up find it difficult to maintain their books and to complete the complicated structure for the payment of sales tax. Exemption of sales tax for new units must be extended from three to five years.

2. Plastics industry is a continuous process industry requiring continuous supply of electricity but various electricity boards considered this as non-priority industry. In West Bengal usage of electricity is prohibited to the units using low tension from 5 p.m. to 10 p.m. and units using high tension from 6 p.m. to 10 p m. on any day of the week and completely on certain days of the week. As most of the units have three shifts to run it has serious consequences on the use of costly raw materials. In some cases sudden discontinuation of power in plastics processing results in the total loss of the material that is in the process and that can not be used again with the same properties and in some cases can not be used at al.

3. Need for industrial estates to cope with the unemployment problem in plastics industry is a must. The processing units require only 500 to 4000 sq. ft. of floor space. In the Western region particularly in Bombay several industrial estates were set up at advantageous points in multi-storeyed buildings with the necessary infrastructural facilities. There were one hundred estates in Maharashtra, eightyfive in Gujarat but only a few in other states.

4. The small processing units experience great hardship, harassment at counters of financial institutions and banks when they apply for loan. As they have no sound financial standing, the financial institutions and banks often delay the sanction of funds to the entrepreneurs.

5. The industry is urgently in need of training centres for operators and supervisors to improve productivity of production units. Guidance cells manned by competent officers are also urgently needed to guide entrepreneurs in market survey for the purpose of identification of products for indigenous requirements as well as for export and to ensure standardisation and quality control of products.

6. In the initial stages, plastics industry developed more or less as a cottage industry Its growth was thus irregular as it was due to individual initiative The Government should immediately promote an industrial base infrastructural facilities within a certain area and thereby check certain malpractices. It should also given health licences to the existing units since plastics are non-hazardous materials.

7. Research and Development facilities should be created so that the industry may find new avenues. It is also desirable that a task force comprising of representatives of Small Industries Service Institute, Director of Industries, Professors of universities. Members of Trade Associations and top management of various processing units be set up so that a comprehensive survey can be made with a view to making rapid progress of industry in our country. □

Debt Servicing in India

(Contd. from page 18)

Special Session of the Trade and Development Board of the UNCTAD which was held in March, 1978. Subsequent to this the U.K. Government have decided to relieve India of a debt burden of £ 565 million (Rs. 932 crores) upto the end of the century through a scheme of annual additional grants to meet the Rupee expenditure on mutually agreed development projects and programmes. Other countries which have announced debt relief to India in varying measures are Sweden and Switzerland. In spite of these, there cannot be two opinions as regards this heavy debt servicing problem in India. The greater dependence upon aid will aggravate the situation further and our foreign exchange reserves will divest towards meeting the debt obligations which in no way is countributory to the economic development of the country and potential for the economy. Thus, in the face of growing development of the country, it shall be desirable to expand trade with the innovations and utilisations of domestic resources. The time to expand the economy depending upon aid, after twentyseven years of planning, acquires no fundamental consideration. India has now advanced much with her resources physical and capital both India, hitherto has to be cautious of other alternative i.e. expansion of trade instead of hanging upon aid. Trade in strict sense is the most suitable stimulating factor for development particularly to a well resource-endowed country like India. It hinges upon prosperity and not responsibility. The keen attention towards the expansion of trade by centre as well as states and the co-operation from the people are vitally required in this respect. The sooner and faster the steps are taken the country with no responsibility like debt service payment, will necessarily, get the opportunity of "high mass consumption" stage of growth. □

Poverty And Incomes Policy

Navin Chandra Joshi*

A person is said to be on the poverty line if his income is Rs. 20 per month at the 1960 price level or Rs. 40 at the 1972 price level. Apparently, the value of this income is now too less in 1980. Applying this yardstick, some 220 million people can be said be living below the poverty line. A majority of them are landless labourers and marginal farmers whose economic position always remains precarious due to seasonal unemployment to which they are subjected. It has been found that 50 per cent households share 82.5 per cent of India's aggregate income while the rest get only 17.5 per cent. Thus, the dimension of unequal distribution of income is appalling. In terms of actual amount, more than 57 per cent households in the rural areas and about 39 per cent in the urban areas have to maintain themselves with less than Rs 100 per month.

Disparity

There is disparity in poverty or affluence among the same classes in different States of India. The number of rural households in the country is about 770 lakh of which 72 per cent are cultivators, 15 per cent agricultural labourers, 2.4 per cent artisans, and 11 per cent 'other non-cultivators'. However, considerable variations in the percentage share of these groups are noticed among the States. Thus, cultivator-households range from 43 per cent in Punjab to 94 per cent in Jammu and Kashmir. On the other hand, agricultural labourers are almost a quarter of the total rural households in some of the States like Tamil Nadu and Andhra Pradesh but they constitute less than 10 per cent in some others like Uttar Pradesh and Assam. In terms of landholdings, about seven-tenths of the cultivators could be described as small and marginal farmers owning two and a half acres to a mixímum of five acres. At the other end of the scale, only 4.4 per cent of the cultivators owned 20 acres or more.

*Reader in Motilal Nehru College, New Delhi.

Holdings

Asset holding gives a sufficient indication of the standard of living or independent productive capacity of the rural masses. It has been found that over one-third of the total rural households owned assets below Rs. 2,500. About 11.3 per cent owned assets even less than Rs. 500. Such a lower level of asset-holding of rural household shows the kind of tenuous existence the rural people lead. About 95 per cent of the rural households have assets forming basic necessities of life like buildings and durable household utensils. In other words, some 40 lakh to 50 lakh rural household do not own a house or durable household assets, let alone productive assets and implements. When the poorest sections owned houses, these valued at barely Rs. 400 which clearly would reveal the sort of accommodation they enjoyed. As a result of such incredibly low level of asset-holding, these households are precariously exposed to the vagaries of the rural economy for their living

Cultivators Well Off

On the whole, however, cultivators are the most well-off among the rural households. While only 19 per cent of the cultivators owned assets below Rs. 2,500, 90 per cent of agricultural labourers, 72 per cent of the artisans and 65 per cent of the 'other non-cultivators' owned as little or less. The average value of the total assets of a cultivator household is estimated at Rs. 15,000 which is 13 times the average asset holding of an agricultural labourer, over six times that of an artisan non-cultivator house-three times that of an 'other non-cultivator' household.

It may be pointed out that disparity among these groups does not mean parity within themselves. Even among cultivators, considerable divergence in asset holding has been found to exist. For example, Punjab shows the highest average value of assets for a cultivator household at Rs. 63,000 which is eight times higher than the average assets holding in Orissa at Rs. 7,000. Again, in Tamil Nadu, Andhra Pradesh, West Bengal and Orissa, 43 per cent to 54 per cent of the rural households own assets below Rs. 2,500 while in Himachal Pradesh and Jammu and Kashmir, hardly 5 per cent to 7 per cent own as little. Curiously, assets are much more concentrated in fewer hands and inequality in asset-holding is much more pronounced in the agriculturally backward States like Kerala, Tamil Nadu and Andhra Pradesh than in the agriculturally prosperous ones like Jammu and Kashmir, Haryana, Himachal Pradesh and Punjab. In absolute terms, it means that the condition of the poorest section is pitiable in the agriculturally poorer States.

Reasons

Small size of agricultural holdings, susceptibility of large areas to drought and floods, large proportion of agricultural labourers competing for fewer jobs are the basic reasons for rural poverty. Incidentally, all the agriculturally prosperous States, belong to the wheat producing zone, which benefited much from the green revolution in wheat. One study by the RBI concluded that the agrarian reforms introduced in some parts of the country had been an exercise in futility in the matter of reducing inequalities in income and wealth in rural areas.

Rational Incomes Policy

In view of what has been said above, it is necessary that more funds should be made available to the agriculturally poorer States for undertaking programmes best suited to their peculiar needs. Besides, any improvement in the lot of the rural people will ultimately depend on the alternative employment opportunities in the rural areas. Time has now come when we devise and apply an incomes policy for the country as a whole. But then, it is not as simple as it appears to be. For evolving a rational incomes policy, many factors including the presence of a sizeable non-monetised sector, the disparities in agricultural and non-agricultural incomes and the different methods followed in calculating dearness and other allowances, have to be reckoned with. The incomes policy will also have to take care of non-wage incomes like profits, dividends, rents and so on. It may be pointed out that out of 20 crore people constituting our working population, only 1.8 crore are employed in the organised sector. Of these 1.12 crore are employed in government, semi-government and local bodies. The remaininig 18.2 crore who are in the unorganised sector have also to be considered while implementing the incomes policy.

The major problem to be tackled in incomes policy will be as to how to improve the incomes of the 96 per cent of the people who belong to our working population. This 96 per cent earns on an average less than Rs. 100 a month and it also includes those who are living below the poverty line. The task is, therefore, stupendous. It can be solved only by enhancing employment opportunities and through increase in wage rates. Adequate employment cannot, however, be generated for the large chunk of population within a short time. It can be done only by giving a big thrust to the cottage and small-scale industries sector. These industries should be dotted in the whole map of India for producing consumer goods. If that happens, then the chronic shortage of some consumer items will not remain any more. Such a policy will help in improving the level of consumption of the masses. Indeed, it will on this test alone that the success or failure of the major objectives of "growth with social justice", will be judged.

It stands to reason that the main solution to the problem of poverty lies in increasing substantially the level of the per capita income of the bottom 30 per cent people from year to year in such a way that their consumption standards get hedged in automatically against inflation, should it aggravate further in future. Hence, production of consumer goods should be accelerated and the distribution machinery geared to its utmost efficiency so that consumption is not hampered by the non-availability of commodities or due to a faulty distribution system. The strategy calls for giving a proper priority to investment allocation such that, at least for some years, production of items catering to the needs of the poor people is concentrated upon on a war-footing as it were. Further, any substantial improvement in the national income will also have to keep itself much ahead of the increasing prices, particularly in consumer goods.

More production of consumption goods is critical, due to the fact that mere redistribution of national income will not solve the problem of poverty. Redistribution could be a success only when there is full employment in the country and when all people have been ensured the minimum levels of consumption. Even if wage increases have to be granted, they should be allowed as they are not mainly responsible for inflationary tendencies. The growth of non-work incomes, fortuitous incomes and unearned incomes should be checked because these types of earnings distort the overall pattern of income distribution and consumption in the country. The national incomes policy will require linking productivity with wages but it need not be strictly enforced unless we are in a position to stabilise the prices of essential goods In fact, it would be sufficient if conditions are created for bringing about a situation in which real incomes move along with productivity. □

Bank Nationalisation : An Assessment

By a Special Correspondent

WITH the adoption by both houses of Parliament the bill in lieu of the Banking Companies (Acquisition and Transfer of Undertakings) Ordinance 1980, one phase of the take over of the six banks on April 15, 1980 by the Presidential Ordinance is over. The Bill will now go to the President for assent and after assent will become law.

The Banks nationalised on April 15 last are : Andhra Bank, Corporation Bank, New Bank of India, Oriental Bank of Commerce, Punjab and Sind Bank and Vijaya Bank.

During the Debate on the Bill in both houses a demand was made for nationalisation of the foreign banks operating in this country and it was rightly rejected by the Finance Minister Mr. R. Venkataraman who said the operation of the foreign banks was on the basis of reciprocity and if the Government were to nationalise foreign banks, branches of all the Indian Banks abroad totalling around 128 would have to be closed. Secondly, when India is trying to boost up her foreign trade and expand operations of her banks abroad, such a step would be unwise and self-defeating since the foreign banks play an important role.

The nationalisation of the six banks together with the 14 banks nationalised in 1969 and the State Bank of India group of eight banks brings within the fold of the public sector 82.6 per cent of all scheduled commercial banks in the country, over 91 per cent of deposits as well as advances as at the end of 1978 The balance represents smaller private sector banks and foreign banks operating in the country.

Public Sector Banks

The public sector banks had a total of 7716 bank offices out of a total of 8826 bank offices in 1969 This has grown to 24,370 bank offices at the end of 1978 out of 29,504 bank offices of all scheduled commercial banks in the country. The branch expansion programme of all banks in 1979, figures of which are as yet unavailable, will add a sizeable figure. The State Bank of India alone has crossed the 5000 mark in branch expansion from 4968 at the end of 1978.

The take over of the six banks has been variously commented upon by different sections as on the previous occasion. Among them was that the Govern-

ment had more urgent things to do like solving the serious economic problems like inflation develpoment of infrastructural facilities to further the economic growth improvement in coal production, power generation and capacity utilisation of existing industrial units. But it should be remembered that bank credit is a tool to control inflation and improve investment in vital sectors for the development of the economy as a whole.

While industry and business felt that nationalisation would among othess disturb the investment climate, affect customers' service and remove competion and consequently dynamism and efficiency in the banking services which have already deteriorated since nationalisation of the 14 banks in 1969, the employees welcomed it.

Boosting Economic Growth

Official reasons are that the nationalisation will bring in additional resources to the tune of Rs. 2300 crores to help the weaker sections, offer scope for better credit planning and carry forward the socio-economic programmes of the government apart from boosting up economic growth in a balanced manner The Government has also asked the banks to utilise 40 per cent of the long term deposits for the Priority Sector against the present 33-1/3 per cent limit fixed earlier, the increase being effected in the next five years.

There have also been complaints that these six banks have not been extending adequate credit to the rural sector, but the bank managements have rejected the charge and explained that their pattern of advances have always been tailored to suit the needs of different areas. They have also pointed out that their overall advances to priority sector had gone up to Rs. 363.18 crores or 30.9 per cent at the end of 1978.

A fact generally known is that each industry group has been controlling or supporting one or the other bank and deriving benefits of larger credit facilities for the growth of their industrial enterprises either for expansion or setting up of new ones. During the last eleven years since nationalisation of the 14 banks in 1969, many big industry houses have grown vastly with their assets going up vertically with the help of facilities available from these smaller banks. The latest decision of nationalisation of the six banks may have been prompted by the desire to stop such mopping up of credit for growth of industrial enterprises of the big houses resulting in imbalances in economic growth of different regions.

Need for Check of advances

This only brings to the fore the need for proper check of advances and effective experience of control by the authority on all banks so that their resources are utilised for efficient and balanced growth of the economy as a whole and not for the growth and development of individual houses and their assets.

The nationalisation of the six banks has been welcomed by the employees as in the earlier case also, as providing security of service among other reasons. It is not as if they had no security earlier. With the labour laws and social security measures in force and backed by powerful and well organised trade unions to back causes good and bad, it would not have been easy for any bank or any institution or establishment for that matter, to take action against any employee. In fact, it may be said, the employees of the banks are more powerful in guarding their own rights. Banks services have deteriorated though several committees have gone into the question and made recommendations. Wages and salaries have gone up and employment in a bank has become a lucrative job compared to many other fields. Customer service requires complete involvement in the work without which no result can be achieved. It will do good to the public if employees of banks and other fields, fulfil their obligations in as zealous a manner as they guard their own rights. Their collective power should take care of this aspect in public interest.

Coming back to the nationalisation, the basis of the present take over of the six banks has been fixed at demand and time liabilities of Rs. 200 crores and above for each bank against Rs. 50 crores and above in 1969. The big difference explains the phenomenal growth of the six banks during the interventing period.

Tremendous Opportunities for Small Banks

The smaller banks that are still left in the private sector with deposits far below the Rs. 200 crore limit, have now a tremendous opportunity for growth and with greater economic activity in the coming years, they are bound to grow and surpass the Rs. 200 crore level in a much shorter period. At the same time, it is necessary to regulate their advance and investment portfolios for balanced growth and supplementing the government's efforts.

The residual companies of the takenover banks will get an aggregate Rs. 18.50 crores as compensation from the government. The bank-wise break up of the compensation is : The Andhra Bank Ltd., Rs. 6.10 crores. The New Bank of India Ltd., Rs. 5.10 crores, Vijaya Bank Ltd., Rs 2.40 crores, The Punjab & Sind Bank Ltd., Rs. 2.10 crores, Corporation Bank Ltd, Rs. 1.80 crores and the Oriental Bank of Commerce Ltd., Rs. 1 crore The compensation amount is considered liberal against the total paid up capital of these banks amounting to Rs. 4.5 crores at the end of 1978. The 14 banks nationalised in 1969 were paid a total compensation of Rs. 83.7 crores against their paid up capital of Rs. 28.5 crores.

Norms for utilisation of Compensation Amount

At this stage, it may be necessary to draw up some norms for utilising this compensation amount of occumulated capital for productive purposes instead of frittering it away. Reports are current that moves are afoot by powerful groups of shareholders of these six banks to gain control over the compensation amount to further their own interests while small shareholders want to get the compensation in cash on prorata basis as they want to take the profit. The compensation amount to shareholders would be higher compared to the fact value of the shares and prices of these shares after nationalisation have gone up substantially reflecting the value and importance of these funds. A demand has also been made by some shareholders that the Government should ensure prorata distribution of the compensation amount to prevent any undue advantage accruing to vested interests.

Deposits from Public by State Undertakings

In this context, it will be useful to consider the Union Budget proposal relating to receiving deposits from the public by the Public Sector Undertakings. It will be worth-while for the Undertakings to get these accumulated capital resources at prevailing rates of interest to step up their production and finance their

development programmes. The shareholders will have the Government's gurantee for repayment since the Undertakings are wholly owned by the Government.

Available data show that the six banks have between 1969 and 1978 recorded an average growth of 176.2 per cent per annum in total deposits, 131.3 per cent per annum in advances and 186.7 per cent in earnings. All these banks had less than Rs. 50 crores of deposits each in 1969. In 1978, Andhra Bank topped the list in deposits with Rs. 438 crores followed by Punjab and Sind Bank Rs. 390 crores, New Bank of India Rs. 364 crores, Vijaya Bank Rs. 331 crores, Corporation Bank Rs. 209 crores and Oriental Bank of Commerce Rs. 170 crores. Punjab and Sind Bank has shown the fastest growth both in terms of deposits and advances among the six. The total advances of the six banks stood at Rs 1174 crores at the end of 1978 against a total of Rs. 95 crores in 1969. Their deposits totalled Rs. 1903 crores at the end of 1978 against Rs. 130 crores in 1969. They had a total number of 2675 branches at the end of 1978 (more were added in 1979) against 526 in 1969. While Andhra Bank topped with 666 branches, Punjab and Sind Bank came next with 499, New Bank of India 371, Vijaya Bank 560, Corporation Bank 293 and Oriental Bank of Commerce 286 at the end of 1978. The Public Sector Banks at the end of 1978 had a total of 24,370 branches out of a total of 29,504 branches of all Scheduled Commercial Banks in the country in 1978. They had Rs. 27,394 crores as deposits and Rs. 17,491 crores, as advances.

Phenomenal Progress by Nationalised Banks

The 14 nationalised banks along with the public sector State Bank of India group of eight banks have also recorded phenomenal progress during this period. For the State Bank of India group, branch expansion went up from 2602 banks offices in 1969 to 7298 in 1978, deposits from Rs. 1439 crores to Rs. 8718 crores and advances from Rs. 1120 crores to Rs 5960 crores during the same period. The 14 nationalised banks expanded from 4615 branches in 1969 to 14,397 branches in 1978. Their deposits went up from Rs. 3033 crores to Rs. 16,774 crores and advances from Rs. 2062 crores to Rs. 10,365 crores till 1978.

A major cause of worry for the banks is the recovery of advances given to sick units and priority sector. According to some estimates, about 50 per cent of the farm loans are outstanding. As a result, recycling of funds is curbed and more deserving cases are denied assistance. Efforts should be made to recover loans and borrowers should be disciplined through whatever measures necessary. Secondly, profits earned by the banks should improve through planned performance and by tightening up overall management control and imparting efficiency in working. This can best be achieved by decentralisation of the banks which have outgrown their size and vesting full authority at different levels of operation instead of awaiting the time consuming clearance from head office for everything.

Promotion Policy

The promotion policy should provide for adequate training periodically for the lower categories of staff to assume responsibility as officers after a period of service of say 15 years or so. Since well qualified candidates are being recruited for appointment in the clerical cadre, they should be able to undertake responsibility after a period of service and training. None should be left out and allowed to stagnate for all time in the clerical cadre without much of a responsibility. Such a procedure will avoid problems of relationship and discipline between senior clerical assistants and junior officers besides periodical agitations against promotion policy by the lower grade staff. At the same time, the attitude of the individual employees also counts in the successful working of such a policy. There must be full cooperation from the employees side in all matters.

Nationalisation of banks was intended to divert larger funds for economic development but apart from extending loan assistance to entrepreneurs, nothing more has happened. The "Lead" bank scheme launched years ago to initiate and carry through economic development at the district level has failed since the achievement is little. There should be some aggressive type of banking and banks should take more interest in industrial and agricultural development of the country. Banks should identify projects and entrepreneurs and help the whole process to hasten the development. Banks should equip themselves with trained personnel for this purpose. It will quicken the pace of economic growth and increase the banks' earnings. □

Industrialisation For Rural Employment-Old Challenge, New Solution

Bepin Behari*

INDUSTRIALISATION has many dimensions In the Indian context its importance has increased in order to provide gainful employment to rural population. The teeming millions dispersed in widely inaccessible regions needed special consideration. In the First Plan period, the problem was tackled through community development programme and promotion of small scale and village industries It was indicated at that time that the community development was the method and rural extension the agency through which was initiated "a process of transformation of the social and economic life of the villages". The village industries were assigned a central place in rural development and establishment of small scale industries were expected to activate the rural transformation process in an effective way.

Diminishing opportunities for gainful employment required to be counteracted in order to raise the standard of life. For this purpose, five major planks were conceived under the First Plan. These were improvement in agricultural productivity, implementation of land reforms, organisation of community development blocks, establishment of small scale and village industries and creation of infrastructure and skill formation including general and technical education. At this stage, an International Planning Team organised by the Ford Foundation visited India. It recommen-

*Free-lance writer, New Delhi

ded organisational support for promoting village and small industries. Consequently the Central Small Industries Organisation with a network of Small Industries Service Institutes spread all over the country was constituted in the Ministry of Industrial Development. Soon afterwards, six specialised Boards, namely All India Handloom Board, All India Handicrafts Board, Central Silk Board, Coir Board, Khadi and Village Industries Board (later converted into a Commission), and Small Industries Board, were set up to meet the specialised requirements in their respective areas. They aimed at containing the diminishing production and thereby augmenting employment opportunities in traditional and modern village and small industries.

Rural Employment

Emphasis on rural employment as a means for eliminating poverty and raising the standard of living received a new orientation during the Third Five Year Plan. Special efforts were needed to counteract the adverse effect of industrialisation which relegated the spiritual values of the country to backwaters and the Indian villages to stagnation. The Third Five Year Plan stated that the basic objective of India's development was to provide the masses of the Indian people the opportunity to lead a good life. To bring about a synthesis between the traditional cultural values of the country rooted in the past and the scientific and technological civilisation of the modern world, Jawaharlal Nehru, who was then the Chairman of the Planning Commission is believed to have inserted in the Plan the idea that "the more immediate problem is to combat the course of poverty with all the ills that it produces, and it is recognised that this can only be done by social and economic advance, as to build up a technologically mature society and a social order which offers equal opportunities to all citizens".

To provide equal opportunities to the rural and the urban population, the Plan aimed at "increase in agricultural productivity, reduction in the dependence on land and diversification of the economic structure of rural areas through the extension of industry and development of social services of an adequate scale, and an agricultural price policy which was both fair to the urban consumer and fully safeguards the farmers' interest", so that "the gap between rural and urban incomes could be kept within narrow limits In a country with a large rural population, these policies", the Plan stated, "have great significance". Apart from the qualitative change, the Plan also aimed at giving much more concentrated attention to rural planning Under inspiration and guidance from stalwarts like Jaya Prakash Narayan, Narendra Dey, T. N. Singh, D. R. Gadgil, Asoka Mehta and others, a rural industries planning committee was constituted in the Planning Commission. Forty-nine rural industries projects spread over the country were taken up with a view to giving intensive attention to them so that the experience derived from them could be adapted to the country as a whole. Subsequently, these programmes were given various financial support. Investment subsidy was granted to certain identified backward districts, transport subsidy was accorded to hilly and inaccessible regions, and technical equipment were provided under hire-purchase system.

The various programmes begun for rural industrialisation has been quite effective in many ways. The output of the village and small industries, in traditional as well as modern sector by 1977-78 increased to Rs. 19,090 crore providing employment to 21 lakh persons. Their annual growth rate during the recent years was 10.9 per cent per annum. The level of education considered a necessary base on which the superstructure of developmental activities can be raised also increased in rural areas from 14.6 per cent literacy in 1951 to 26.4 per cent in 1971 (though 40 per cent is internationally assumed to be the level for economic take off in rural areas). The roads are available to such an extent that 55 per cent of the villages with population of 1,500 and above and 42 per cent of villages with population between 1,000 and 1,500 are now connected with all weather roads. Land reforms have reached the level where out of 22.5 lakh hectares of land estimated to be surplus, about 26 per cent has so far been distributed and legislation with regard to scaling down the rent, occupancy rights, share cropping and the right of resumption are being greatly expedited. Integrated rural development comprising of Small Farmers Development Agency (SFDA) Marginal Farmers and Agricultural Labourers (MFAL) scheme and Command Area Development Programme (CADP) has already covered 2,000 rural development blocks and 300 such blocks are being taken up every year additionally. Rural industries project programme along with rural artisans programme were later included under a comprehensive scheme of district industries centres, 246 of which were already sanctioned by January 1979 The area development programme with capital subsidy for identified backward districts, transport subsidy to hilly and other inaccessible regions, Sumangalam (Tamil Nadu) and Antyodaya (Rajasthan and Uttar Pradesh) projects for specific village and rural families improvement in their earning capacity have also progressed. The rural marketing centres for establishing retail outlets for rural products are being undertaken under the current strategy of rural industrialisation.

Devastating Evaluation

Inspite of rapid progress made in many directions the lot of common people in rural areas does not seem to be very heartening. Recently, Prime Minister stated that 71.07 per cent of rural population in Orissa, 64.00 per cent in West Bengal, 62.98 per cent in Tamil Nadu, 61 35 per cent in Madhya Pradesh, 57.76 per cent in Kerala, 57 67 per cent in Andhra Pradesh, 55.82 per cent in Bihar, 53 94 per cent in Maharashtra, 52.96 per cent in Uttar Pradesh and 52 33 per cent in Karnataka are below the poverty line. Such a devastating evaluation of the village planning for the last thirty years clearly emphasizes the need for a radically different and tremendously effective approach to the village transformation process.

The task of rural unemployment is not of easy solution. Different persons have made various estimates of this situation. The Planning Commission has estimated that the rural working force in 1977-78 was of the order of 22.31 crore persons and agricultural labourers amounted to 5.26 crore persons, the total of the two being 27.57 crore. On a rough basis, excluding the persons below 15 years of age and those above 70 and taking female participation ratio as only

half, about 22 crore persons will require employment opportunities. In 1973, 21.1 per cent of the total employed population were distributed—in manufacturing (9.3 per cent), trade and commerce (5.5 per cent), construction (3.6 per cent), transport, storage and communication (1.9 per cent), mining and quarrying (0.5 per cent), electricity, gas and water (0.3 per cent). Even on the assumption that employment generation in these sectors during recent years had been to the level of 25 per cent—a fantastically optimistic assumption, these would not absorb more than 4.2 crore presons. Even on a liberal estimate that 5 crore would be employed as agricultural labourers and 8 crore as cultivators, employment opportunities for more than 9 crore in rural areas will have to be created. This level of employment opportunities worked out to be 2-1/4 times those available currently in manufacturing, transport and such other sectors. Evidently creation of such a level of employment opportunities during the next few years is impossible.

The challenge is severe, but it has to be met squarely. Almost all over the world, the social engineers are desperately trying to work out some effective solution of the problem. To meet the challenge the first exercise urgently needed is to evaluate the nature of the rural unemployment realistically before its eradication could be attempted. Many research studies have already been undertaken which may cast value able light on the problem. Alan R. Beals of the University of California, in a survey covering a decade for Gopalpur village located 480 kms east of Bombay concluded that the motivation for urban migration despite the various deprivations existing in Bombay slums was varied ranging from family feud, prostitution and indebtedness to the desire to get-rich-quick. "The sojourners returning to Gopalpur brought with them money and entered the rural economic system as middle class small farmers". Surveys of other migrant labour would also reveal a similar situation.

In fact the existence of relatively much higher wage-rates prevailing in urban areas despite severe and rigorous working conditions in urban industries, has aroused among the rural population, an urge to move towards such concentrations.

The Nouveau Educated

Kanta Ahuja of the State Institute of Public Administration, Jaipur highlighted that "low earnings and low per capita expenditure are not identical......low earnings of hired labourers may in turn be due not so much to the lack of work per se but may be due to the mechanics of labour market which keeps wages low both absolutely and in relation to the amount of work put in". She has also stated that "although in the villages surveyed more than 50 per cent of the poor farm households were the small farmers and the landless yet the percentage of poor households among the middle and large group of farmers varied between a low 20 per cent to a high 70 per cent. The opportunity to avail himself of wage-paid employment is denied to the middle farmer because of the demands of farm work and not necessarily because of unwillingness to accept wage-paid employment". Thus, it appears that the lack of employment opportunities was not necessarily the main weakness of rural employment planning but other factors such as mechanics of labour market, rigours of farm work, caste prejudices, mental proclivities of 'nouveau educated' youngmen besides several such other factors do contravene the expansion of job opportunities in rural areas. It is common knowldege that the Punjab farmers/rural workers would not take up low paid jobs even when unemployed whilst migrant workers from Uttar Pradesh would be encouraged to perform the same. In Uttar Pradesh and Bihar, unionisation of farm workers induced them in many cases to deny accepting work on farm land while their family members starved. Such socio-political dimensions of rural unemployment are often swept below the carpet.

An important fact which needs to be kept in view in the present context is the fact that the rural workforce is a floating mass. It consists of the persons who are not permanently occupied in farm work; they are not much inclined to take up rural manufacturing activities; employment opportunities in neighbouring urban areas have not yet clicked with them; social organisation of the villages community has radically destroyed the traditional social security arrangements ; and unrealistic aspirations have been inculcated in them. An effective work programme for them should take into account the floating nature of rural workforce made surplus due to (i) land re-organisation and (ii) non-availability of work opportunities which could be adapted to their non-eight-hours-work schedule Some disincentives to urban migration in non-pecuniary terms without infringing their right to movement also required to be considered in the present context.

Small Scale Sector

The small scale manufacturing units have often been encouraged on the ground that they are well-suited to village life. Based on this premise it was protected against competition from established large scale manufacturing units. The various promotional measures accorded for the development of small scale units have however misfired at least as far as rural employment is concerned. One of the most serious causes of this drawback has been conceptual. The definition of small scale units, considered merely in terms of investment outlay unconnected with the number of persons employed, the nature of items produced, location of the units, the covered space, quantum of total turnover and profit earnings, marketing and financial linkages and dependence or otherwise of the unit on external industrial inputs has led to several difficulties. As this definition is intended primarily to shelter the small manufacturing units from the competitive repercussions of more efficient large scale units and for the purposes of providing them special privileges, the small entrepreneurs are on the one hand discouraged from expanding their units to reap the advantage of economies of scale, and on the other, they are clamouring to raise the investment ceiling to enable them to continue enjoying special privileges This situation is neither helpful from the point of view of efficient production prospects, nor for providing greater employment opportunities by adopting appropriate technology. Developed under such conditions, the growth and expansion of small and village industries in any real sense for providing rural employment has been relegated to back-waters.

The availability of abundant manpower in rural areas was argued to be an important consideration for promoting small scale units. In order to organise pro-

duction process with high degree of labour-intensity, the appropriate technology movement has begun almost in every country. Strong lobby for it exists even in India. The aims of technology movement needed careful consideration. Satistically, the labour-intensity may support inefficient modes of production and wage payments unrealated to labour productivity thus making the goods too costly for the consumers.

Eradication of Rural Unemployment

Eradication of rural unemployment requires decision at various levels. These decisions must be realistic. Undoubtedly, the tempo of industrialisation as under different programmes has to be accelerated. As the empirical evidence during the last three decades suggests, such an approach would have only peripheral impact unless the same is accompanied by other more lasting steps. These steps have not yet been proved anywhere, so at the first instance only cautious move could be recommended. The intensive efforts attempted under the new strategy should in the beginning be tried in a few selected areas. These areas can be identified on the basis of their relative share in population and similar share generated by the manufacturing units there. As the metallurgical and chemical industries are established on consideration which induce their heavy concentration at a few locations, we may find out the employment generated by agro-based manufacturing units, which in fact account for 69 per cent employment in the manufacturing sector. Depending upon the number of districts to be taken up under the pilot project, those where little employment has been so far generated could be listed on the basis of differences in the two ratios.

These districts could, on the lines of OGL under import trade control, be open to all kinds of industrial licences provided certain basic conditions are fulfilled. The entrepreneurs should undertake to employ nine-tenth of the workers from the district itself; only one-tenth of industrial inputs should be brought in from outside the district. As far as possible, these units should be located in rural areas, but this may not be a restrictive condition. These units will not be granted any special subsidy in addition to what would be eligible under this project. The workers employed in these units would be paid 20 per cent of their wages in "wage coupons" which could be exchanged against goods manufacured in the district and available in local retail outlets. While making purchases the workers could be eligible for rebate equivalent to half the value of the coupon, that is, 10 per cent of their wages. That is, if he has been paid Rs. 80/- in cash and Rs. 20/- in wage-coupons, he could get local goods worth Rs. 30/- which would make his wages equal to Rs. 110/-. The entrepreneurs can be reimbursed 10 per cent for their participation in the scheme. Thus, they would be subsidised to the extent of Rs. 10/- per worker getting Rs. 80/- in wages. The retail outlets can be given a participation bonus of Rs. 5/- per coupon. In this way, the workers could have received Rs. 110/- as wages, the entrepreneurs a subsidy of Rs. 10/- each worker and the retail outlets Rs. 5/-. This scheme could be employment generating; the consumption expenditure of the rural workers may initiate a multiplier effect very beneficial for the creation of many other types of business and commercial activities. The scheme may meet the challenge of rural unemployment to a great extent. □

Mohd. Fazal

SHRI Mohd. Fazal (57), Member, Planning Commission, is an authority on public sector enterprises.

He got his B.Sc. from Allahabad University and Post-graduate diploma in Business Administration from London School of Economics. He later attended several management development programmes in India and abroad.

Shri Fazal had worked as deputy chief executive in a private sector organisation from 1946 to '60; Chief Projects Officer of an enterprise of Jammu-and Kashmir Government (1960-63), Chief Executive of the Trombay Fertilizer Project (1963—65) and Managing Director of Hindustan Insecticides Ltd. (1965—70)—the last concern, during his period, earned 15 to 20 per cent profit (after depreciation and taxes) and also received awards from the President of India for two successive years for excellent performance. He was the Chairman and Managing Director of Engineering Projects (India) Ltd. (1970—79), which during his tenure secured project contracts valued at about Rs. 800 crore in India and abroad and earned substantial profits. During this period Shri Fazal had a spell as Secretary of Department of Industrial Development in addition to his responsibility in the Engineering Projects (India) Ltd. He has also been a member of important public sector organisations and management bodies and has on several occasions gone abroad as member of trade delegations.

As the Member of the reconstituted Planning Commission, Shri Fazal is in overall charge of industry and minerals; power and energy; transport and communications; information and broadcasting; housing, urban development and water supply; labour policy and labour welfare and village industries. □

Handloom Industry in Madhya Pradesh

K. G. Shrivastav*

DESPITE the weak structure of handloom weaver societies, lack of sufficient institutional finance, absence of proper processing and marketing arrangements and project approach till 1976-77, handloom industry of the State has shown some progress particularly in 1977-78 and 1978-79. There has been an increase in the number of active looms, production etc. of the cooperative fold. The number of active looms in the cooperative fold, which was 4,559 in 1977-78, increased to 6046 in 1978-79. Production which was 6.75 million metres in 1977-78 increased to 9 million metres in 1978-79. Sales of primary weaver societies increased from Rs. 182 lakhs in 1977-78 to Rs. 282 lakhs in 1978-79. Similarly sales of Apex weaver society increased from Rs. 121.07 lakhs in 1977-78 to Rs. 152.34 lakhs in 1978-79. The total number of handlooms in the cooperative sector which stood at 14,156 in 1978 rose to 14,671 in 1979. This increase has been mostly due to organisation of new weaver societies.

One thing that pinches is the presence of large number of inactive handlooms in the cooperative fold. About 58 per cent or 8625 handlooms were inactive at the end of 1978-79. Though their number has gradually declined the pace has been very slow.

A high power study team on the problems of handloom industry under the chairmanship of Shri B. Shivaraman, appointed by the Government of India, recommended that 60 per cent of handlooms should be brought under the active cooperative coverage by the end of the Fifth Five Year Plan. Programme was prepared and efforts were made in the State to implement the recommendation. Inspite of all round efforts only 13 per cent or 4559 handlooms of the total of 33,069 could be brought under the active Plan. This is to be remembered that Fifth Five Year Plan ended in 1977-78, one year before its scheduled period. Though the percentage of active cooperative coverage increased to 18 in 1978-79, large number of handlooms (or 42 per cent) remained outside the cooperative fold at the end of 1979. Reasons for slow progress, as mentioned earlier, mainly related to weak structure of weavers societies, lack of sufficient institutional finance, absence of proper processing and marketing arrangements and project approach, meagre government financial assistance till 1975-76. If we take these reasons into account the progress achieved in the sphere of cooperative coverage during the Fifth Five Year Plan can not be said unsatisfactory. In fact a good start was made in 1976-77 as per the recommendations of the Shivaram Committee and a Handloom Directorate was established in the State. Both gave a new direction to the thinking regarding the handloom industry. Problems and difficulties facing the industry were considered seriously and remedy to solve them was tried.

Progress under Centrally sponsored Schemes

Until 1976-77, the policy was to promote the growth of handloom cooperatives and all governmental assistance was limited to the sector. During the Fifth Five Year Plan also upto 1975-76 this trend continued. Later on the trend changed and flow of governmental assistance turned towards the weavers outside the cooperatives. In 1976-77 two important projects, namely Intensive Development Project, involving financial assistance of Rs. 185 lakhs., and Export Oriented Project of Rs. 40 lakhs assistance as centrally sponsored schemes were implemented through Madhya Pradesh State Textile Corporation in this State. Main objectives of these projects were to cover 10,800 handlooms within 5 years, (10,000 handlooms under Intensive Development Project and 800 handlooms under Export Oriented project) of the those looms which were outside the cooperative fold, supply of yarn at reasonable rate and improved equipments, train the weaver in imported technology of weaving, promote the production of exportable handloom cloth and to arrange the marketing of handloom production.

Besides the above two centrally sponsored schemes, Janata cloth production scheme is also being implemented by the Madhya Pradesh State Textile Corporation. Main objectives of this scheme are to provide regular work to the weavers and Janata cloth to the consumers at cheaper rate.

In 1976-77 two important projects, namely Intensive Development Project, involving Financial assistance of Rs. 185 lakhs and Export Oriented Project of Rs. 40 lakh assistance, as centrally sponsored schemes were implecented through Madhya Pradesh State Textile Corporation in this State.

For the first time due to implementation of the three centrally sponsored schemes, Governmental assistance benefitted the weavers who were outside the

*Freelance Writer

cooperative fold though progress achieved in this direction has not been as expected. By the end of 1978 though 3970 looms had been covered, the number of looms outside the cooperative fold was small. Most of the looms covered by the projects were of the cooperative fold. Inspite of the above fact the projects have made a good impact particularly in providing continuous employment to the weavers in the State.

Progress made by the Madhya Pradesh State Textile Corporation under centrally sponsored schemes has been shown below :

	1977 (Actual)	1978 (Actual)	1979 (Estimated)
1. Looms brought under prduction . .	2,140	3,970	5,500
2. Supply of yarn & raw material (Rs. in lakhs)	52.80	76.74	150.00
3. Procurement of handlooms cloth (Rs. in lakhs) . . .	95.10	174.38	250.00
4. Looms modernised .	1,499	1,465	2,000
5. Weavers trained . .	129	189	250
6. Production of Janata Cloth (m sq. meters) .	25.72	46.86	80.00

It may be mentioned that there has been tremendous increase in the expenditure on handloom industry in the State. Figures of expenditure reached from Rs. 21.02 lakhs in 1975-76 to Rs. 133.92 lakhs in 1976-77, Rs. 171.47 lakhs in 1978-79 and is expected to exceed Rs. 217 lakhs in the current year i.e. 1979-80

There is much to be done to improve the lot of the weavers. During the coming years a large number of handlooms will have to be brought under the active cooperative coverage in addition to providing regular work to the handlooms already working in the cooperative fold. Besides, various facilities to run properly have to be provided to the handlooms which are outside the cooperative sector.

In view of the importance and magnitude of the task, these is urgent need for a new approach and strategy. In the new strategy first stress will have to be given on making the handloom cloth more and more popular and availability of it to the consumers at reasonable rate if not cheaper than the mill made cloth. For this purpose, services of the experts and technical persons are required for regular study of the market and for advice and guidance so as to produce the handloom cloth as per the requirements of the market. Besides arrangements and facilities for the supply of yarn at cheaper rate and improved weaving appliances, processing and marketing, institutional finance at concessional rate of interest etc. will have to be expanded and liberalised to the weavers working within cooperative fold as well as outside it. Financial structure of primary weavers societies will need to be strengthened for achieving the target of 60 per cent active cooperative coverage. Handloom Directorate established in July, 1976 in order to pay proper attention to the problems of the weavers will have to be strengthened also by sanctioning a good set up to it as early as possible by the State Government. □

Indigenous Know-how on the Increase

GIVEN the opportunity, we too can develop new techniques and devices. This has been amply demonstrated at the competition conducted by the Maharatta Chamber of Commerce and Industries. Out of the 60 entries, eight entrepreneurs from Bombay, Pune, Sholapur and Aurangabad have been given the G.S. Parkhe Merit Prizes for their inventions.

Maya Flexiliner

Maya Flexiliner, developed by Shri N. R. Maya, is a unique instrument, for speedy and accurate drawing of parallel or perspective lines at predetermined equispaced distance, as well as controlled increasing or decreasing distances and also of other complex pattern such as elliptical forms, steps, segmentations of curves and concentric circles. Flexiliner can be of immense help to Applied Artists, Architects, Engineers and others.

Paraldehyde I.P.

Paraldehyde is a Acycle Polymer of Acetaldehyde, a depresant drug, developed by Shri S.B. Mokate and Shri K. C. Nagda of Parali Chemicals, Sholapur. Paraldehyde can be used in medicines as hypnotic, sedative and anticonvulsant.

Vortex Cleaning System

For the first time in India, Span Asscciates have started manufacturing Vortex, a cleaning system on commercial basis. The system separates the contaminants in a liquid and delivers only the clean liquid. The system finds its application in various fields like sugar industry, ceramic industry, pulp and paper industry and machine tool industry.

Tungsten Carbide Slip Gauges

Precise measurement is of utmost importance for the quality control of the product manufactured by engineering and automobile industries. Mikromix Associates have produced Slip Gauges in four grades.

Pressing Relief Valve

This is a totally new device designed to protect power transformer from damages resulting due to pressure build-up owing to any fault. This valve, while replacing the commonly used explosion vent, does many other functions.

Cross Cheese Binding Machine

Plastic tape or thread is generally used in packing gunny bags for fertilizer or chemicals. They break when pulled at high tension. The new cross cheese winding machine increases the total carrying capacity from one kilogram to four kilograms and the method of operation and efficiency simultaneously. □

The Story of IFFCO

R. R. Rao*

THE Indian Farmers Fertilisers Cooperative Ltd. (IFFCO) forms the bright silver lining to the dark cooperative cloud in our country. Established only five years ago, it has made impressive strides in the fields of production and business and emerged as the largest single producer and marketer of chemical fertilisers in the country. The IFFCO, the largest cooperative organisation in Asia, is a federation of 27,550 cooperative societies spread over 16 States and three Union Territories. Farmers, the backbone of our agriculture, are the owners as well as customers of the Cooperative as the products are distributed through the cooperatives. The society has three fertiliser plants one at Kalol, the other at Kandla and the third one at Phulpur.

The plant at Kalol, the second Natural Gas-based Ammonia-Urea Complex in India (the first one being Namrup Plant) has an installed capacity of 910 tonnes per day of Ammonia and 1200 tonnes per day of Urea. The Cooperative's Kandla Plant, the largest NPK producer in our country, has an installed capacity of 41,500 tonnes per annum of NPK products. These two plants were built at a total cost of Rs. 97.60 crores. The third plant at Phulpur in UP, having an annual capacity of 5 lakh tonnes of Urea, and constructed at a cost of Rs. 190 crores, is being given final touches before commissioning and going into production. Short supply of coal and Naphtha and acute diesel problem have come in the way of commissioning, otherwise it would have gone on stream in July/August 1980. The World Bank has rendered financial assistance to the tune of $ 109 millions.

The production map of both the plants has been showing an upward trend upto the cooperative year 1978-79. The production of Ammonia and Urea at Kalol Plant was 18.5 lakh tonnes and 2.41 lakh tonnes respectively in 1975-76 and reached the record level in 1978-79. In 1979-80 cooperative year 2.61 lakh tonnes of Ammonia and 3.10 lakh tonnes of Urea were produced against 2.76 lakh tonnes and 3.47 lakh tonnes respectively in the preceding year. The Carbon Dioxide compressor of the Urea plant had given way and hence the short fall in its production. But the capacity utilisation of Ammonia plant is as high as 87 and that of Urea plant, 78 per cent. The Kandla Unit kept on increasing the production of NPK from 1.62 lakh tonnes in 1975-76 to 5.51 lakh tonnes in 1978-79 Actually the plant produced in 1978-79, 27 per cent more than the installed capacity. In the following year the production fell to 5.25 lakh tonnes due to some bottlenecks in the supply of Phosphoric Acid, but still the production was more than the installed capacity of 4.15 lakh tonnes per annum.

*Our Assistant Editor

The Kandla Plant is being expanded to produce one million tonnes of NPK against the present capacity of 5 lakh tonnes. The expansion programme involving more than Rs. 25 crores of expenditure which is being met from the IFFCO's own resources, is expected to be completed by the middle of next year. The bottlenecks in the smooth running of the Kalol plant are being removed which will enhance the production capacity from 900 tonnes per day to 1000 tonnes of Ammonia which in turn will increase Urea production.

Profit

The IFFCO has always been a profit making organisation. In 1975-76 the profit was Rs. 136.34 lakh. It shot up to Rs. 3662 lakhs in 1977-78 and dwindled to Rs. 3552 lakhs in 1978-79 and Rs. 1600 lakhs in 1979-80. The fall was due to revised pricing formula adopted to standardise the return. Added to it are the price hike of Phosphoric acid, other inputs and transport bottlenecks. However the society earned a total profit of Rs. 110 crores and has been saving foreign exchange of about Rs. 138 crores per annum.

Sales

The sale of Ammonia has been stabilised at 6000 tonnes in 1978-79 and 1979-80, after showing a gradual decrease from 25000 tonnes in 1975-76 to 5000 tonnes in 1977-78.

Sale of Urea registered an upward trend from 182000 tonnes in 1975-76 to 352000 tonnes in 1978-79 and slumped to 246000 tonnes in 1979-80. The NPK sale reached its peak of 594000 tonnes in 1978- and in the next year 500000 tonnes were sold. Actually in 1979-80 Indian agriculture was in doldrums on account of the severe drought in several States. The situation had been further aggravated by the shortage of railway wagons and diesel. In spite of all these major constraints in the process of reaching the rural farmers, the IFFCO had done well to achieve impressive sales during last year.

Friend of Farmer

The IFFCO has launched an ambitious plan to bring about a socio-economic transformation among the farmers by adopting about 250 villages spread over different States. The IFFCO has been acting as a catalytic agent to bring the technicians, bankers, suppliers

The Cooperative earned a total profit of Rs. 110 crores and has been saving foreign exchange of about Rs. 138 crores per annum.

of inputs and agricultural experts together to make a concerted assault on the poverty of the farmers.

With the view to provide important agricultural inputs alongwith modern technical know-how under-one-roof to the farmers at a convenient central place, the IFFCO is operating 57 "Kisan Seva Kendras" in Haryana, Punjab, UP and Delhi.

To ensure supply of quality seeds, the IFFCO, in collaboration with National and State Seed Corporations and certifying agencies, has taken up the Seed Multiplication Programme in Punjab, Haryana, and UP. During 1979-80, about 1100 hectares were covered and seed worth Rs. 6.50 lakhs was sold through the IFFCO's Service Centres.

The Cooperative has been giving some monetary reliefs to the farmers through the cooperatives. The IFFCO has 286 warehouses in 16 States, to ensure timely supply of fertilisers, and to save considerable amount by way of savings in transportation, loss in transit, godown rent, interest on inventory, and so on with the result cooperatives were benefitted to an extent of Rs. 42 per tonne in 1979-80. Also the member cooperatives received a patronage rebate of Rs. 59.41 lakhs on NPK and a quantity rebate of Rs. 20 and Rs. 25 per tonne of urea and NPK respectively. The IFFCO has paid a 6 per cent dividend to its shareholders for the last two years and this year Rs. 1.69 crores.

With the view to provide important agricultural inputs along with modern technical know-how under-one-roof to the farmers at a convenient central place, the IFFCO is operating 57 "Kisan Seva Kendras" in Haryana, Punjab, U.P. and Delhi.

The IFFCO sacrificed a part of its profit to establish Cooperative Rural Development Trust (CORDET) to impart practical training to farmers. The CORDET has set up and been running the Moti Lal Nehru Farmers' Training Institute at Phulpur, alongwith a soil testing laboratory with a capacity to analyse 30,000 soil samples a year. The Institute is imparting specialised and medium term courses for young farmers in modern agricultural technology.

Other Activities

The Dry Ice Plant of the IFFCO produced 500 tonnes of dry ice in 1979-80. The Cooperative is going to enter into the production of insecticides by constructing a 500 l.p. a. Malathion plant at Kalol at a cost of Rs. 1.4 crore. Further the IFFCO has promoted a giant enterprise called Krishak Bharati Cooperative Limited to own and operate the new Fertiliser Plant Complex being brought up at Hazira near Surat at a total cost of over Rs. 750 crores. The IFFCO, which has ensured the well being of its employees, is going to look after the overall welfare of the farmer also. Impressed by the quality of the IFFCO's promotional and educational programmes in rural areas, the Regional Office ILO desires to educate the rural poor in family welfare, health care including nutrition, environment, hygiene, child care and so on.

This is the story of the Indian Farmers Fertiliser Cooperative Society Limited which has shown spectacular achievement in the production of fertilisers and has become a symbol of service to the farming community. □

CORRIGENDUM

It is regretted that some printing errors have occurred in Yojana issue dated 15th August 1980. The corrections are given below:

Page No.	Correct version
16 foot-note	Eminent Economist and former Member-Secretary of the Planning Commission. This article draws very substantially on a part of the Kale Memorial Lecture 1979 on "The Planning Process and Public Policy: A Reassessment". The lecture was delivered at the Gokhale Institute of Politics and Economics, Pune on June 2, 1979.
20 foot-note	Member, Agriculture and Rural Development, Planning Commission.
30 foot-note	....do not reflect the views of Yojana or the Planning Commission.
40 caption	Mazagon Dock
41 caption	Prime Minister Indira Gandhi at a Planning Commission meeting.
41 caption	Women employees in the Hindustan Antibiotics Ltd., Pimpri.
45	Shri Mohammed Fazal—Member, Dr. Man Mohan Singh—Member-Secretary.
50	The name of the author is K.M. Maheshwari.
59 caption	In search of 'black diamond' ; miners in a coal mine.
80 caption	Milk, Wholsome food, Central Milk Dairy, New Delhi.
91 caption of first item	P.M's call for agriculture power generation.

Neem-

A

Multipurpose

Tree

S. K. Shukla*

The neem tree gives out more oxygen than most of th other trees. Hence it is considered a good purifier of ai

DHANVANTRI, the father of the Ayurvedic system of medicine in India, reciprocated the regard of the famous Greek physician Lugman and asked the messanger, a leper, to go back with the message of goodwill, but advised that on the way, he must sleep under a neem tree, brush his teeth with its twigs, apply the paste from its bark on his wounds apply neem oil on his body every day and cook food with neem fuel. Food might consist of tender neem leaves and neem fruits. When the leper reached Greece, the Lugman was simply astonished to find the leper in perfect health. So goes the legend. Neem tree is valued, even now, for its innumerable medicinal and economic uses.

Habitat

Neem (*Azadirachta indica*) is indigenous to India, but the exact location of the plant is somewhat doubtful. It grows in South America, Indo-Malayan Regions, upper Burma and also in Tropical Africa. The tree is fairly fast growing and is distributed practically all over India in all types of soils and climatic conditions. An altitude of more than 1,000 m. however does not suit it. One can find the tree growing luxuriantly in arid and sandy tracts of Rajasthan, heavy rainfall areas of Kerala, alkaline *Usar* soils, and shallow and saline soils. Being hardy it is well suited to sub-marginal lands where agricultural crops give either very low yield or fail altogether. The powerful roots can extract nutrients from highly leached sandy soils. The nutrients are subsequently made available to the top soil through the litter of fallen leaves and twigs. The tree thus benefits the soil and protects it from wind and water erosion. Areas, likely to be inundated or, which are frosty, however, do not favour its survival. The tree thrives well in loc lities with an annual rainfall of 450—800 mm. a can withstand maximum temperature of abo 50 degree C. It is grown as an avenue tree but h been found wild in Deccan forests. It has also be planted in Andaman Islands.

Leaves

The tree is of moderate to large, size handsom usually evergreen and grows upto about 20 m. height. It has a straight, rather short trunk and dense rounded bright green crown. Usually the gi is 2 to 2.5 m. Sometimes the sap oozes out of t stem in hot months, a phenomenon called "weeping The sap can be collected and stored. Leaves, 23 38 cm. long, are alternate, compound with 5 to pairs of leaflets and very short stalk, oblique a toothed, crowded at the ends of branches. You leaves are pale, tender green and rust tinted. Th fresh green colour and shining surface give the tree charming appearance. The leaves are shed February-March, but the leafless period is quite bri Due to its large leaf area, its photosynthetic rate high and it gives out more oxygen than most of t other trees. Hence it is considered a good purifi of air. The tree is never completely leafless except dry localities.

*Publicity & Liaison Officer, Forest Research Institute & Colleges, Dehra Dun.

The flowers are small, white, fragrant, bisexual and are borne in axillary clusters which are shorter than leaves. The tree blossoms between April and May along with new flush of leaves. The fruit is a smooth, ellipsoidal drupe, 1.25 to 1.8 cm. long, greenish-yellow to yellow when ripe and has bitter sweet pulp with usually one and sometimes two seeds. The fruits stink badly after a shower.

Fruits ripen from May to August. Birds are very fond of ripe fruits and this aids in seed dispersal. The seeds reach the soil during rainy season and germination takes place in about a fortnight. The plant is capable of surviving on dry and poor soils and establishing itself with ease even under these adverse conditions.

Transplanting

Thoroughly ripe seeds are collected for propagation of trees and sown soon after, as the seeds are not viable for long. It has been found that depulping and cleaning the seed till it becomes white, considerably improve the germination percentage. For transplanting, seeds are sown in nursery beds in lines 15 cm. apart and 2.5 cm away from each other in the line. Seedlings are ready for transplanting during the first rains when they are 7.5 to 10 cm. high. Soil working and weeding are very useful. In frosty localities, seedlings are to be protected by providing a cover of thatch. For afforestation purposes direct sowing has proved more successful than planting out. Root and shoot cuttings can also be made use of out of plants about one to two year old.

The rate of growth in plantations varies considerably depending on the quality of soil. The rate of development of young plants after the first season is fairly rapid. It attains a height of about 10 m and girth of one metre in about 40 years. Marsden (1917) has recorded the following measurements of neem trees in Nellore district of Andhra Pradesh.

Age in years .	9	8	6	3
Height (m) .	6.1	3.7	3.4	2.4
Girth (cm) .	41.9	38.1	11.4	10.2

Timber

The comparative suitability as a timber expressed as percentage of the same properties of teak, from specimens of U.P. origin are given below.

COMPARATIVE STRENGTH OF NEEM

(AS COMPARED WITH TEAK AS 100)

AZADIRACHTA INDICA --

The timber seasons well. It is easy to saw, to work by hand and on machines. It turns on a lathe to a fair finish, but does not take polish well. It lends itself to broad carving although the grains are not smooth.

The timber somewhat resembles mahogany. The wood is durable even in open situations and is usually not attacked by insects or termites, which is particularly attributed to the oily nature. It is used as timber for construction, furniture, bullock carts, axles, yokes, board and panels, ship and boat buildings, oars, oil mills, cigar cases, carved images and agricultural implements etc. Its use as backing and sides of cupboards and bottoms of drawers is advocated as it is said to keep the moths away. The green twigs are used as tooth brush for cleaning teeth.

The bark yields a fibre which is locally utilised for making coarse ropes. Leaves are repellent to insects

Medicinal Value

The bark exudes an amber-coloured gum which has great medicinal value. Paste of the bark is often applied on wounds. A tonic wine is prepared from the bark. A decoction of leaves is often used for washing wounds of human beings as well as cattle. Lukewarm decoction is useful for fomenting eyes when suffering from eye sore. Leaves and flower buds are also used as a vegetable in West Bengal and Orissa.

Dried fruits are recommended for people suffering from boils, but the most useful and valuable product of the tree is the seed. Each seed yields about 20 per cent of a deep yellow fatty oil with a disagreeable garlic like flavour, commercially known as "Margosa oil" or "Neem oil". The oil is used as an anthelminthic and antiseptic, and is much in demand. An average tree yields about 50 kg. of seed. The total potential of neem seed in the country is estimated at 4,18,000 tonnes which is equivalent to 83,600 tonnes of oil (oil yield being 20 per cent). The present production of neem oil in the country is roughly 30,000 tonnes.

Economic Value

Apart from harnessing the untapped valuable resources, collection of over four lakh tonnes of neem seeds can generate employment for about 4 lakh rural poor for about two months and enable them to earn wages over Rs. 7 crore.

About 80 per cent of the oil produced is used for manufacturing soap and other pharmaceutical items. Some quantity is refined for massage and for other medicinal uses. It is sometimes used for burning, but it smokes badly.

It is estimated that neem cake of 3,30,000 tonnes worth Rs. 30 crore is produced each year. The cake has over 5 per cent nitrogen, 1 per cent phosphorus and 1.5 per cent potash. It is not only a good fertlizer but pest repellent also. For paddy and sugarcane crops 20 per cent cake with urea is good which leads to nitrogen economy. Neem oil cakes are used as repellant for termites. The cake is also effective in reducing the incidence of citrus canker and citrus leaf minor.

Processed neem seed meal is equally rich in essential amino acids as are other edible oilseed meals and can be used as cattle or poultry feed.

There is need in the country for taking advantage of the benevolence of neem which is so easy to cultivate and so low in its demand for nutrients and moistur. Its capacity to thrive even under exacting conditions calls for extensive planting on culturable waste lands, parks, roadside avenues, residential and institutional compounds and so on. □

KHERIA village lies 10 kms. from Agra. This t[illegible] village has a population of 800 predomina[illegible] Yadavs who own negligible land. Half the popu[illegible] tion banks upon small factories|foundaries runn[illegible] in Agra for sustenance. However for a long time [illegible] village has acquired the distinction of being kno[illegible] as the only slate pencil making village in the regi[illegible]

There were certain obvious reasons which hel[illegible] people seek slack season jobs other than agric[illegible] ture. The advantage of being on the main highw[illegible] linking Agra with Kanpur with spontaneous mar[illegible] facilities at Agra, was one of the factors helping [illegible] seek life-sustaining job. In this perspective slate p[illegible] cil making was the ultimate choice for them.

There is one interesting story which is reporte[illegible] told by the people responsible for introducing the sl[illegible] pencil making job in the village. Ten years ago, one [illegible] the residents of this village happened to find a job [illegible] Agra in a similar privately-run-industry. He remained [illegible] this job for a long time and mastered the tricks of [illegible] trade and later started his own small unit with his o[illegible] resources some time in 1972 with his family memb[illegible] as workers. The raw materials viz. kharia pather (C[illegible] cium Carbonate) and others were procured from [illegible] local businessmen who in turn had to import th[illegible] from Rajasthan and Gujarat. In no time the u[illegible] blossomed and secured good return.

Today this village has managed to put up 30 to [illegible] small industrial units with each unit turning about [illegible] truck-load finished material every month. Initially [illegible] units were manually operated but with the passage [illegible] time electricity was introduced and today more t[illegible] 75 per cent of the units are using power. As in [illegible] case of other small units here also money lenders tr[illegible] to exploit the owners. For want of funds, they can[illegible] afford to import the raw materials direct. Even mark[illegible] ing has been a problem for these small units. To[illegible] these units purchase the materials from the capital[illegible] and are bound to sell their products under c[illegible] tract terms to them. This is resulting in heavy loss [illegible] the units.

It is heartening to note that Kheria has develo[illegible] an industry for which raw materials are to come fr[illegible] distant areas. For enabling this industry to pros[illegible] people feel that some governmental agency with st[illegible] vigil on its performance be brought into existence i[illegible] mediately so that it could help the people in mak[illegible] raw materials available and providing better return [illegible] their products. □

PLANNED FAMI[illegible]
FOR
PLANNED PROSPERI[illegible]

D. P. Sharma
Field Publicity Officer, Agra.

Palm Fibre Industry In Andhra Pradesh

S.V.N. Reddy*

EXTRACTION of fibre from Palmyra Palm (Borassus flabellifer) is an important village industry in Andhra Pradesh. The Industry is heavily concentrated in the three coastal districts of West Godavari, East Godavari and Visakhapatnam and to a lesser extent in Srikakulam, Krishna, Khammam and Nalgonda districts. In the three coastal districts it is an age-old occupation of rural labour. It provides employment practically round the year to an estimated two lakh people. It is significant that 90 percent of labour depending on fibre extraction are Harijans, the rest are from tapper and other backward communities. In the upland taluks of West Godavari district even tribal communities like Koyas have taken to the industry on a large scale. Fibre extraction was the only source of livelihood to vast majority of labour this year when agricultural operations were at a stand still due to late monsoons.

It is not sufficiently known that this important agro-forestry-based industry apart from its labour intensive nature, is also a valuable foreign exchange earner to the country. The industry is wholly export oriented. Only 10 per cent of country's production is consumed internally. Palm fibre is exported to as many as 30 countries and India's palm fibre production corresponds roughly to the world production. Although palmyra palms are grown in a few other countries like Sri Lanka, Burma, Bangla Desh, China, etc., only in India fibre extraction has been taken up on a commercial scale. Even in India only a fraction of palm wealth—the nature's bounty, is tapped. There still remain huge reserves of palms awaiting systematic exploitation either for their edible products--neera, gur and sugar or for their non-edible products like fibre extraction.

*Lecturer in Economics, AV College, Hyderabad.

Vanity bags, mats etc. made from Palmyra fibre

Extraction of Fibres

Extraction of fibre from palmyra palms in India is confined practically to two States viz. Andhra Pradesh and Tamil Nadu and to a very small extent Kerala. Kakinada in Andhra Pradesh, Tuticorin and Colachel in Tamil Nadu are the exporting centres of palm fibre from India. Andhra Pradesh enjoys unique position accounting for nearly 60 per cent of country's export. India's exports during 1970-71 stood at 9182 tonnes valued at Rs. 2.25 crore, out of which exports from Andhra Pradesh accounted for 5416 tonnes valued at Rs. 1.23 crore.

Exports (i.e. from Kakinada Port) from Andhra Pradesh during 1978-79 were of the order of 3877 tonnes valued at Rs. 1.80 crores. However, exports this year are expected to register an all time

Brushes and brooms from Palmyra fibre

high. Figures for the six-month period (i.e. April 1979 to September 1979) revealed a steep rising trend. A total of 2600 tonnes valued Rs. 1.26 crore had already been exported and the expectations are that exports would touch Rupees three crore mark. The reason is obvious. Due to drought conditions this year labour had taken to fibre extraction on a large scale to save themselves from starvation.

Apart from fibre, palmyra stalks valued a little over Rupees one lakh were exported during 1978-79. The exports of stalks over the years have shown a steady downward trend. From 1393 tonnes valued Rupees nine lakhs in 1958-59 exports declined to a meagre 132 tonnes valued at Rs. 1.04 lakh in 1978-79. This is due to serious competition palmyra stalks face from synthetic filaments which are being used in road cleaning machines in the U.S.A. and the U.K.

Fibre exports from 1966-67 to 1978-79 reveal a fluctuating though a declining trend quantity wise. In value term, however, there was increase because of realisation of higher unit value. The declining trend visible in exports can better be appreciated only if we have the knowledge of the end uses of fibre in importing countries and competition it faces in other natural and synthetic fibre.

Brushes and Brooms

Palmyra fibre is used in the manufacture of various brushes and brooms having household and industrial application. Several types of brushes are manufactured such as sanitary, floor cleaning, road|street cleaning, railway and platform cleaning brushes, deck scrubbing, bottle cleaning and industrial brushes for cleaning machines, etc. There are thus infinite uses of fibre.

Indian Palmyra fibre, however, is facing increasingly keen competition in the importing countries particularly in the U.S.A. and continental countries from both natural and man-made synthetic fibre, more so from the latter. Apart from India, other fibre exporting countries (vegetable fibre, other than palmyra palm) are Mexico, Sri Lanka and Nigeria. Indian palm fibre faces keen competition from Mexican Tampico fibre. More than the vegetable fibre, it is the synthetic fibre that poses serious threat to India's palm fibre. Unlike vegetable fibre whose prices have been all the time on the rise, prices of synthetic fibre, it is stated to have actually declined. End-use pattern of the palm fibre has also been undergoing a change as it is being mixed in varying proportions with animal and other vagetable fibre. There is also an increasing tendency to mix it with synthetic fibre. All these factors therefore contribute to downward trend in the in-take of Indian fibre. Unlike the declining trend in evidence in exports to the U.S.A. and continental countries, the happy feature about exports to Japan is that exports have been showing a steady upward trend.

It is clear that the in-take by Japan alone accounted for as high as 82 per cent during 1977-78 and 81 per cent during 1978-79. In 1961-62, the share of Japan was only 51 per cent and it was 67 per cent during 1972-73. The survey conducted by the Indian Institute of Foreign Trade has revealed a great potential for exports to Japan. It is estimated that market size of vegetable brush fibres in Japan is around $ 25 million The preference of Japanese for natural fibre and its vast assured market for different types of brushes assure a bright future for India's palm fibre. The enquiries made at Kakinada and other places from the wholesalers and exporters testified to the dependability of Japanese market. Indian exporters however have to take all possible care as to the uniformity in the quality of fibre exported and strict adherence to delivery schedules. More important is the fact that prices of fibre need to be stabilised at the current level for sometime to come. Any further rise may well encourage the Japanese manufacturers to substitute synthetic one for natural fibre.

Production Process

A brief outline of the different production processes that fibre goes through before it is ready for export is

interesting. The palm botanically known as palmae, is termed as the 'Princess of the vegetable kingdom'. Of the four varieties of sugar yielding palms, viz. Date, Palmyra, Coconut and Sago, Palmyra palm is grown in abundance in Andhra Pradesh particularly in the two Godavari and Visakhapatnam districts. On account of its manifold uses the palmyra palm to the villagers is a vegetable 'Kalpa Tharuvu'. The productive yield of a single palm on an average both edible and non-edible is estimated at Rs. 125 per annum.

The quantity of fibre and yield from 5—10 years old trees is said to be good. Such trees are taken on lease from land owners on rent ranging from Rs. 0.50 to Rs. 1 per tree. The bases of palmyra stalks called petioles are cut down for extraction of fibre. These petioles are beaten by a wooden hammer on a stone base and combed repeatedly passing through a row of iron spikes fixed to a wooden plank so as to remove pith and foreign material. Normally artisans sell the raw fibre to the local merchants in its wet form in the village or in weekly shandies. The merchants dry the fibre and after sorting on the basis of their length tie into bundles locally known as 'Bondamulu' These are sold to wholesalers and exporters who further process before it is finally exported. This process is a highly technical one requiring skilled and specialised labour In Kakinada proper over 1000 workers are engaged in various processing units.

The fibre is sorted into four grades viz. superior, special—ordinary, orinary and FAQ (fair average quality) in descending order of quality The grading is done according to length.

Grade	Length
1 or A (Superior) . . .	16" and above.
2 or B (Special ordinary) .	12" to 16" or 14" to 16"
3 or C (Ordinary & FAQ) .	5" to 12" or below 14"

Organisation

The industry is highly decentralised and entirely in private hands. Groups of workers are found engaged in fibre extraction either in fields or in households. There is no agency that supervises over the production operation. A chain of intermediaries operate at various stages of marketing. But broadly the three-tier system is in operation. At the primary stage—the local merchant purchases fibre from the producer. At the secondary stage there is the wholesaler and at the tertiary stage is the exporter who processes and finally exports.

An attempt was made but not with much success to organise and bring the artisans under co-operative fold. Andhra Pradesh State Palm fibre cooperative society was set up in 1971-72 but due to various reasons had to suspend its operations in 1973-74 At the moment there are about 14 Palm fibre Cooperative Societies functioning in both West and East Godavari districts, but they are in an infant stage to make an impact on the industry. In the absence of any Cooperative Agency in the field, private traders have complete control over the industry and hence exploit the unorganised workers by offering lower prices to their produce. Short weighment is another malpractice resorted to by the traders.

The Industry is highly labour intensive. All the processes involved in are manually operated. The extraction of fibre. sizing and grading etc. are labour intensive operations accounting for 64 per cent of cost of production.

The raw material i.e. palmyra palms are easily available locally. In fact not all the tappable palms available are exploited, only 14 to 20 per cent of palm wealth is exploited in the State. There is particularly plenty of scope in the districts of Srikakulam, Krishna, Guntur, Nalgonda and Khamam. If all the available palms ar systematically exploited it could result in the generation of additional employment opportunities. At the moment only two lakh people are estimated to be employed in fibre extraction but could easily provide employment to one million people.

The industry helps in supplementing the meagre income of the workers derived from agriculture. The average daily earnings of a male worker is estimated at Rupees five and that of a female worker Rupees four only. Palm fibre extraction has thus greatly contributed to material welfare and well-being of the rural labour.

The requirement of capital per worker is very little. Except for tree rent, he does not need any other capital. The tools needed are simple—one knife, one stone base, a wooden hammer, a wooden plank with 13 spikes for combing operations and a 'kaavadi' for carrying loads of petioles and fibre. All this needs very little investment and is the only capital.

The technology needed is simple. All the operations involved in fibre extraction are based on age-old, traditional and hereditary skills. Although there may be and undoutedly is, scope to improve and modify existing tools and techniques, the present technology may be considered as appropriate in the local context. Here is a technology which may appear to be simple and crude by modern standards but it has eminently served the purpose. This proves the fact that all that is traditional is not necessarily out-moded or irrelevant.

The industry is not only labour intensive but weaker section oriented Overwhelming percentage is from Harijans and other weaker sections of the society. Even for the tribes in the interior upland areas this is their mainstay of life.

The industry is entirely dependent on exports. This total dependence on foreign market however, cannot but induce an element of uncertainty in the future of the industry. Hence there is need for diversificaion. It is better if finished products—brushes and brooms, are exported rather than raw fibre as it would contribute to increased foreign earnings. All these can have ready domestic market too. Together, the internal and foreign markets would go to improve the prospects of employment and earnings of the country. □

BOOKS

Alternative Technology

Alternative Technology K. D. Sharma and M. A. Qureshi (Fds) Institute of Advanced Study, Simla pages 331, 1979 Price Rs. 67.

EVERSINCE Prof. E. Schumacher was invited by the Planning Commission to advice on their Rural Industrialisation Programme in 1961, the theme of technology appropriate to rural Indian conditions became important, the subject began as intermediate technology and much enthusiasm was aroused among the intellectuals of this country as well as abroad. The Indian Institute of Advanced Study, Simla and the Council of Scientific and Industrial Research, New Delhi jointly had sponsored a Seminar in September 1975 on Alternative Technology. At this Seminar, a large number of papers were presented and valuable discussions were held. The Seminar was inaugurated by Shri P. N. Haksar. The publication under review is the proceedings of this seminar.

The publication is divided into nine parts. The area covered by these papers has been very extensive and each one deserves careful study The importance of the subject was very rightly indicated by Mr. P. N. Haksar who drew the attention of the scientists and technologists to the declining intellectual achievements of the contemporary Indian scientists.

Truly, the publication highlights the intellectual bankruptcy of the Indian in pushing forward technological solutions for our national poverty and social regeneration. Mention has been made in the publication of the items identified and recommendations finalised for implementation in the Indian context but all the progress so far has been circular and the country is still to achieve a breakthrough.

The publication is very timely because the country once again is seized with the problem of technological transformation and it is hoped that the various papers presented at the Seminar which have been very well edited and printed will go a long way towards evolving appropriate technology under Indian conditions.

Gana Madhava Rao

Econometrics

Introduction to Econometrics—Principles and Applications *by G. M. K. Madnani, Oxford & IBH Publishing Co New Delhi, pp xii+328, Rs. 25*

ECONOMETRIC techniques play an important part in all operational research and planning. This book is an addition to ever increasing stock of text books on Econometrics. Justification of its publicaion lies in simplified expositions of all available techniques withou resort to overfancy notations and unnecessary mathematical squabbles. No doubt, this book would be very useful to students and researches who are interested in econometric methods.

It is written primarily for the postgraduate students of Economics in Indian Universities. It is divided into two parts. Part one contains three chapters followed by two small appedices on Summations and Matrix Algebra. Three chapters deal with elementary statistical concepts, probability distribution, estimation and testing of statistical hypothesis. Part Two consisting of ten chapters expounds basic econometric methods available until the present development.

The book is brilliantly organised for classroom presentation. In addition to numerical examples used for each and every technique there are assignments in every chapter. It is written in such a style that it would restore self-confidence of an average intelligent student to learn and apply econometric methods.

There remain, however, some suggestions for improvement. It would have been better if illustrative examples were drawn from empirical research on Indian Economic Structure and Planning. Important questions on Econometrics set by leading Universities might be included within respective assignments. Appendix on matrix algebra should be made a chapter with additional material on minors, cofactors, rank and partition of matrices and solution of a set of homogeneous equations. Chapter on probability should have some discussion on normal distribution. A brief analysis of Monte Carlo studies should form a part of the last chapter.

In the final analysis I must agree with the publisher that this book serves a useful introduction of Econometrics to the beginners. Considering easier accessibility and lower price as compared to its volume and quality the book should be on the shelf of every Indian student for whom it is intended.

Dr. Tarun Das

Pakistan Atomic Threat

Nuclear Pakistan—Atomic threat to South Asia, *P. B. Sinha and R. R. Subramaniam; Vision Books, 36C, Connaught Place, New Delhi, pp 156, Price Rs. 55.*

THE use of a single 10 KT weapon against the centure of Bombay would result in about 2,65,000 fatalities Yes, the people in the subcontinent have started getting vision of their own Hiroshima According to P. B. Sinha and R. R. Subramaniam—a Historian-Scientist duo—a grave atomic threat is emerging in South Asia and they advocate that 'India should project the profile of a power equal to China'

This book carries on the debate set in motion by an earlier one on Pakistan's Islamic Bomb by Palit and Nambudiri. The attainment of nuclear capability by Pakistan calls for a revision of defence policy and planning in India. This is the whole point of the book During the Janata interregnum Morarji Desai restated that India would never go nuclear and there was much hair splitting about whether our Pokharan blast was an explosion or an implosion ! Charan Singh briefly talked about a possible revision of policy. With Mrs Gandhi back in the saddle a clear formulation could well be expected.

The book under review points out that the chief motives for a country to go nuclear are considerations of security and prestige. It goes on to trace the development of atomic capability in Pakistan. It all started with Z. A. Bhutto's emotional reaction to India's progress in the field. The issue was complicated by alleged underwriting of Pak efforts by Arab countries who, it is said, want an Islamic Bomb made to countervail the

hidden strength of Israel. As a matter of fact, Pakistan has neither the necessary industrial infrastructure nor a steady source of weapons grade fissile material to sustain its nuclear adventure. But with their readiness to beg, borrow or steal, they can still test and produce the deadly weapon. They are expected to do so before the eighties are out. In the absence of a matching delivery system, conventional planes may be used to do the damage as was done in Hiroshima and Nagasaki.

Should we over-react to Pakistan's nuclear threat? More than a decade has passed since China became a nuclear power. That did not scare us out of our wits. The reason is that a nuclear war will not be a bilateral war; it will certainly involve other powers and because of this possibility, it is more likely to be averted than staged.

Some of the sidelights of the book are more illuminating than the highlights. The authors have brought-out how the big powers use the smaller powers as pawns in a ghastly game of chess. At a time when the USA was supplying conventional weapons to Pakistan free of cost, the money carried away to defray 'administrative costs' turned out to be equal to the price of the free supply ! The ultimate solution lies in the ability of the leaders of the region to cease to be pawns and assume the stature of statesmen capable to sorting out their problems bilaterally keeping the wolves of the wild west at bay.

C. Mathew Chandy

Working of Panchayati Raj

Panchayati Raj: An Analytical Survey; Published by *the National Institute of Rural Development, Hyderabad;* 331 *pages; Price Rs.* 75.

THIS volume, in the words of its authors, seeks to provide "a comprehensive and objective analysis of the nature and working of Panchayati Raj". This study opens with an excellent account of the evolution of local Government institutions in India. Starting with the institutions of the ancient Indus Valley, this account touches on local Government institutions in every region of this sub-continent. This is followed by a survey of the Community Development movement. Its Gandhian inspiration and the lessons derived from major experiments in various parts of rural India are adequately brought out. An exhaustive account of the Balwantrai Mehta Committee and its recommendations is also provided. The emergence of the three-tier system of Panchayati Raj and its introduction in various parts of the country are described with thoroughness Part II of this volume deals with the structure of Panchayati Raj institutions and the role of various agencies in rural development administration. Every category of personnel, starting from the Village Level Worker to the Collector, has been separately and competently dealt with. The comments of the performance of these functionaries are balanced and fair

The problem of inter-departmental coordination at the field level and systems of supervision and control are handled well. Another illuminating part of the study pertains to the financial resources of Panchayati Raj institutions. The inter-action of Panchayati Raj institutions, co-operatives and various other agencies in the rural sector is also described. On the whole, this volume would be very useful to any student of the Indian approach to local-self government. The bibliography at the end of each Chapter is exhaustive and speaks for the massive work which was obviously gone into making of this volume.

This is a commendable work as far as it goes. But it doe not adequately bring out the economic and caste conflicts which provide the background to the functioning of local self government institutions. The rapidly swelling ranks of the rural poor, the deteriorating employment situation and the rise of landbased and caste-oriented rural elites into prominance are aspects which need to be highlighted. The fact that the balance of political and economic power in the rural areas is still heavily turned against the poorest sections of the rural population, namely agricultural labourers. Harijans, marginal farmers and small farmers, etc. and its implications for local self government are not brought out. In the absence of effective organisation of the rural poor and assumption of rural leadership by such elements, Panchayati Raj institutions will continue to remain aneamic and unable to play a role in bringing out social change.

C. N. S. Nair

Growth Process in Backward Areas

Growth Process in Ghazipur by Kripa Shankar, *Arthik Anusandhan Kendra, Allahabad*, 1979, *pages* 98, *Rs.* 20.

MICRO-level planning for districts which are backward assumes greater importance in the context of planning for development. Ghazipur, an eastern district of Uttar Pradesh is the subject of study of the book under review, Ghazipur is an agrarian district and naturally plans of its development should comprise of agro-based projects of various types. The author has dealt with the different aspects of agricultural and industry of the district and indicated scope for augmenting agricultural and industrial production. While discussing the issues involved in the process of planning the author has made a number of valuable suggestions.

The book bears evidence of good work done in collecting data pertaining to cropping pattern, average yield, areas under cultivation, sizes of holdings, animal population for the period covering 1950-51 to 1974-75. The author has discussed the financial resources needed for different project and made suggestions for lead bank to invest the savings deposited within the district for financing the projects.

Many of the suggestions are, by and large naive but some of them are novel. Besides, the author has not spelt out the modalities as to how people should be made responsible to draw up the plans for development. How bureaucrats should be made accountable to people also remains an open question. The book is bound to be a valuable addition to the collection of materials on planning in general and micro planning of backwrad region in particular.

A. K. Guha

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STEP BY STEP

MELTRON Semiconductors

MELTRON Semiconductors Limited (MSL), a company promoted by Maharashtra Electronics Corporation Limited, (MELTRON) has been constructed at a cost of Rs. 485 lakhs, to manufacture 8 million semiconductor devices per annum starting from July 1980. The unit has already secured orders worth Rs. 6 lakhs, well before the plant went into full commercial production. Meltron Semiconductors is the first company in India to use the latest glass passivation technology and are in the process of manufacturing semiconductor power devices which are vital components in a wide range of consumer, industrial, civic and defence industries—from television and rad[illegible] sets to space communication, from light an[illegible] fan controls to power station equipment, from co[illegible]tors to nuclear instruments.

Sub-Contracting Exchanges

THE sub-contracting exchanges run at various small industries service institutes of the Small Industries Development Organisation, have helped 2,900 effective tie-ups between large and small-scale units during 1979-80. It is estimated that business amounting to over Rs. 33 crore materialised from this inter-action. The first two sub-contracting exchanges were set up in 1970 at Bombay and Madras. Since then, 14 more such exchanges have been set up.

Equipped with up-to-date data systems and modern office equipment, these exchanges are functioning as a part of the Small Industries Service Institutes at Ahmedabad, Bangalore, Bombay, Calcutta, Cuttack, Gauhati, Hyderabad, Indore, Jaipur, Kanpur, Ludhiana, Madras, New Delhi, Patna, Srinagar and Trichur.

Palmyrah Workers Insured

IN Tamil Nadu palmyrah industry is next to agriculture and handloom industry. By utilising nearly 14 per cent of the palm wealth, the industry provides employment to about 2.5 lakh persons. In view of the need for improving the conditions of the workers, Palmyrah Workers' Development Society, a Voluntary Agency has been organised. It has successfully covered 3800 workers under the Janata Personal Accident Scheme in the year 1979-80 and has a target to cover 10000 workers by the end of 1983.

BHEL Develops Alternator Rectifier System

INDIA'S first 2600 HP broad guage main line diesel electric locomotive fitted with alternator-rectifier system has been successfully tested and commissioned at Diesel Locomotive Works, Varanasi, and is under despatch to Itarsi for regular service for hauling mainline goods and fast passenger trains. It has been developed and manufactured indigenously at the Bhopal unit of the Bharat Heavy Electricals Limited.

This is an important landmark in the development of the diesl electric locomotive technology. It will not onl[illegible]ble to improve availability of the locomotives [illegible] of reduced maintenance, but it will also [illegible]ake it [illegible]sible to indigenously manufacture higher Horse-Pow[illegible] diesel electric locomotives having single engine-alte[illegible]or.

[illegible]rh Bags HUDCO Trophy

THE Central Housing and Urban Development Corporation (HUDCO) has instituted a Roving Trophy since 1978 for the best site and services scheme executed during a particular year. At least 400 plots with a service core are required to be developed by an agency keeping all inclusive cost within Rs. 2,700 The Site and Services Scheme at Karsan and Dadumajra in Chandigarh executed during 1978-79, by Chandigarh Housing Board was considered the best scheme by the Committee of Experts, which unanimou[illegible]warded the HUDCO's Roving Trophy to the Ch[illegible]h Housing Board and a cash prize of Rs 10,000.

GSFC's Performance

THE Gujarat State Financial Corporation has recorded substantial progress in sanction and disbursement of loans during the year 1979-80. The Corporation sanctioned loan of Rs. 36.35 crores to 1492 units, registering a rise of over 27 per cent in the sanction The disbursements were also higher by 18.9 per cent at Rs. 22.28 crores. The share of Small Scale Sector in the units assisted was 96 per cent. The assistance in the backward areas amounted to Rs. 13.56 crores and in the rural areas Rs 5.69 crores.

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yojana

GLOBAL RICH & POOR

Let Us Remember

Gandhiji's Words of Sanity

INDIA cannot cease to be one nation because people belonging to different religions live in it. The introduction of foreigners does not necessarily destroy the nation; they merge in it. A country is one nation only when such a condition obtains in it. That country must have a faculty for assimilation. India has ever been such a country. In reality, there are as many religions as there are individuals; but those who are conscious of the spirit of nationality do not interfere with one another's religion If the Hindus believe that India should be peopled only by Hindus, they are living in dream-land. The Hindus, the Mohammedans, the Parsis and the Christians who have made India their country are fellow countrymen, and they will have to live in unity, if only for their own interest. In no part of the world are one nationality and one religion synonymous terms; nor has it ever been so in India

* * *

Both Hindus and Muslims are sons of India Our mortal mother who gives us birth is entitled to our reverence and worship. Such worship purifies the soul. How much more worthy of our common allegiance and reverence must be our Motherland then, the Imperishable Mother on whose breast we are borne and will die ? All those who are born in this country and claim her as their Motherland, whether they be Hindu, Muslim, Parsi, Christian, Jain or Sikh, are equally her children and are, therefore, brothers, united together with a bond stronger than that of blood

* * * *

Hindustan belongs to all those who are born and bred here and who have no other country to look to Therefore, it belongs to Parsis, Beni Israels, to Indian Christians, Muslims and other non-Hindus as much as to Hindus. Free India will be no Hindu Raj, it will be Indian Raj based not on the majority of any religious sect or community but on the representatives of the whole people without distinction of religion I can conceive of a mixed majority putting the Hindus in a minority. They would be elected for their record of service and merits. Religion is a personal matter which should have no place in politics. . . .

* * * *

In the eye of religion all men are equal Learning, intellect or riches do not entitle one to claim superiority over those who are lacking in these If any person is suffused and sanctified with the purifying essence and the discipline of true religion, he regards himself under the obligation to share his advantages with those who have fewer

* *

There must be a breach in the double wall of caste and province. If India is one and indivisible, surely there should be no artificial divisions creating innumerable little groups which would neither interdine nor intermarry. There is no religion in this cruel custom. It would not do to plead the individuals cannot make the commencement, and that they wait till the whole society is ripe for the change. No reforms has ever been brought about except through intrepid individuals breaking down in human customs or usages.

* * * *

What does unity consist in and how can it be best promoted ? The answer is simple It consists in our having a common purpose, a common goal and common sorrows It is best promoted by co-operating to reach the common goal, by sharing one another's sorrows and by mutual toleration

* * * *

(Contd on CoverIII)

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Chief Editor : **P. Srinivasan**
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Cover Design · **J. N Adalja**
Advt Manager : **T. R. Maheshwari**

Editorial Office :
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Editorial

Concord or Cataclysm?

ATLEAST from the 70s consistent efforts are being made for reducing the gross imbalance prevailing in the world economic system. Apart from the organisations of have-not nations, common international organisations have also been patiently trying in this direction. But throughout the 70s the economic condition of the poor South has been worsening and is threatening to further deteriorate in the present decade.

The Brandt Commission, whose report is aptly entitled "A Programme for Survival", has recommended the creation of a world development fund for the massive transfer of resources from the affluent North to the indigent South. As pointed out by Shri L. K. Jha, a member of that Commission, in his article elsewhere in this issue, about 4 billion dollars a year will be enough to build the ecological infrastructure in the poorest countries of the world in order to set them on the road to prosperity. Compared to the astronomical amounts spent by the big powers on armaments, this developmental expenditure, which will remove the "non-military threats" to world peace, is negligible. It is also to be noted that helping the poor countries is not just an altruistic act but a necessity for the wellbeing of the rich nations themselves.

Our Foreign Minister has, in his forthright speech at the recent special session of the UN General Assembly, listed the various economic discriminations suffered by the poor nations. He has graphically pointed out how even the internationally accepted low aid figure of 0.7 per cent of GNP has been reduced in practice to less than half of that figure by the rich nations. He has also cautioned the complacent developed countries that the eradication of mass poverty is no longer "a matter of charity but security against the catacylsmic future."

The Commonwealth Regional Conference, which was held last month in New Delhi, has also re-inforced the call for establishing a just world economic order. It has commended the recommendation of the Brandt Commission to hold a mini-summit conference, the UN decision to initiate new global negotiations and the UNCTAD idea of setting up a common fund.

In spite of the unhelpful and arrogant attitude of the advanced countries, the organisations of poor nations as well as the international bodies have so far been only appealing to good sense of the North. But the time has now come for the less and least developed countries to become more self-reliant, to strengthen their economic unity, to take advantage of the big power rivalries and to become more assertive in their approach Just as conialism was forced to go from our midst, economic imperialism will also have to go. It would be good for all concerned if this injustice is removed through global cooperation rather than through conflict. □

Tasks Before the Sixth Plan

Prime Minister Indira Gandhi*

THE National Development Council can rightly be described as the High Command of Planning. It represents the Centre and the States and it voices the collective judgement of several parties. It reflects the aspirations of our people. We have gathered here to determine the shape of the Sixth Plan.

The international environment is every day becoming harder for us developing countries. We are amongst the hardest hit by the oil crisis. The global inflation caused by it has upset all our earlier calculations and hopes. Rich men's clubs take care of their own members and we are told to find for ourselves.

We have been able to reinfuse confidence in the planning machinery. It has become possible again to indicate the new directions. We inherited a machinery that was somewhat broken and disorganised. Communalism, casteism and indiscipline were apparent everywhere. And here, I would like to express our deep sorrow at various incidents which have taken place in India causing loss of life and property causing suspicion between members of one community and another. All this slows down the national will and national movement which we want to build up. It is obvious that the present situation is not communal trouble as all of us have understood it over the past years when communal rioting occurred. There is a definite attempt to make different sections come into conflict with authority, that is, with some arm of the police. Sometimes the blame is sought to be put on the Army. So there is a very distinct attempt at destabilisation of government functioning and this has to be kept in view because it has a very direct bearing on what we can achieve with our planning.

The task now before us is to energise the economy. The Sixth Plan must chart the course of growth and induce investment which will help us to achieve our principal objectives of removal of poverty and unemployment and the attainment of self-reliance.

The task now before us is to energise the economy. The Sixth Plan must chart the source of growth and induce investment which will help us to achieve our principal objectives of removal of poverty and unemployment and the attainment of self-reliance.

We look to the State Governments not only to share and advise us in this great task, but to help in accelerating the process. I firmly believe in a relationship of trust and cooperation between the Centre and the States based on a common desire to take the nation ahead regardless of narrow, sectarian, regional or even political considerations. I may state that some of the State Governments keep on repeating that we intend to topple them. I assure you that this is very far from our intention and we have never at any time in the past or now or in the future have any such desire. On the contrary, we have always tried to give the fullest cooperation and tried to smooth out any difficulties which might have arisen.

Growth Perspective

Economic growth in a country like ours cannot conform to any known model grafted from outside We have our diversities as well as our similarities We are blessed with resources and yet besieged with shortages. We now have a significant manpower which can turn dross into gold, given the requisite encouragement. Our greatest shortage is that of time. The population is increasing and demands are becoming higher in number as well as in kind. While we do want to give a square deal to our farmers, our workers and others, we have to invest in agriculture and industry and generate surpluses. We have to strengthen the infrastructure and undertake a dynamic R and D effort to reinforce self-reliance. All the time we have to adhere to our goal of improving the living conditions of our poor, of our unemployed and underemployed people and ensure equitable sharing of our country's wealth.

We shall not be daunted by these problems. Adversity has been our mentor and challenge and our companion throughout our journey. The collective determination and patience to succeed that we have so far shown will take us further. We have to accelerate the growth rate. It can only be done gradually, but raise it, we must, from less than 4 per cent on an average in the last five years to 6 per cent in the Seventh Plan. I have referred deliberately to the Seventh Plan because a long-term perspective has to be kept before us as we get busy with immediate tasks. A large part of the investment in the Sixth Plan, such as for power, transport, fertilisers, will bear fruit in the Seventh Plan.

Keeping in mind this perspective, the current state of the economy, the constraints on resources and the need to control inflation, the Planning Commission has attempted to arrive at the maximum feasible growth rate in the Sixth Plan of about 5.3 per cent This order of growth is attainable, in fact is inescapable. But it is not going to be easy. The crux

* From her address at the meeting of the National Development Council, on August 30, 1980,

is in mobilising resources. Much as we should have liked a larger planned effort than the Rs. 90,000 crores outlined in the Draft Framework before us, we have to be hard-hearted, hard-headed and practical. Even this magnitude requires a massive effort at various form of resource mobilisation. That effort must be forthcoming from the Centre as well as the States.

Resource Mobilisation

Resources materialise only if a number of difficult and somewhat unpopular efforts are taken. Fiscal discipline has to be restored. Wasteful expenditure everywhere has to be controlled. We cannot let public sector enterprises be run inefficiently and accummulate losses. If our pricing policies are responsible for such losses, they must be immediately and properly revised, but we must guard ourselves against taxing the public for our inefficiency. There must be a parallel effort to improve the working of public sector undertakings and utilities and to generate public savings through them for a higher order of growth In this process we should do our best to intensify efforts at self-reliance. Among the various capacities we have under-utilised are our scientific and technological skills.

We have placed new accent on balanced growth of science and technology. I adhere firmly to my father's view that planning is the application of science to national problems which I mentioned in the NDC in 1976. This policy has become even more relevant in our present situation when our energy problem has worsened. Imports of petroleum alone account for over 80 per cent of our earnings from exports. Rapid and substantial increase in exports and development of our own energy sources should have priority.

In any discussion of the plan, the questions asked are about the size, rate of growth and priorities. As I said earlier, we should have liked to place the size well above Rs. 90,000 crore, but we cannot escape realities. There is some validity in the argument that at the rate of inflation effective investment may be not much more than envisaged in the earlier Draft. But this does not alter the absolute availabiilty of resources. The growth rate is not dependent merely on the new outlay, but on the increase in our efficiency, in the utilisation of capacities already built up. As a nation we seem to have become slack. Not only additional production, but even the maintenance and upkeep of our existing assets needs far greater attention. In every segment of our activity, we must launch national efficiency drive.

Now the priorities. These are : more agricultural and industrial production, expansion of irrigation and power, strengthening of technological self-reliance, the improving of transport and communications, the development of energy resources, the Minimum Needs Programme, the Rural Employment Programme, promotion of exports and programmes to build the productive capacity of weaker sections. We cannot afford to ignore family planning and welfare. This, we have agreed, has to be a voluntary programme, but it has to figure largely in our schemes. Our present exercise keeps in mind all these considerations. It lays great emphasis on increasing production as well as on equitable distribution of wealth and the uplift of the weakest of the weak in our society. Hence the stress is on the Minimum Needs Programme and on the number of new thrusts in benefiting small farmers, landless labourers, artisans, self-employed etc. Special attention must be given to Harijans and tribals, to women and to our minorities. They must be enabled to live and work in safety and in dignity, people of different areas which have, through no fault of their own, been economically backward due to lack of communication or other historical reasons, must also be specially looked after. □

Letters

Sir,

I am a student of Economics Honours of T.N.B. College of Bihar. I am a regular reader of 'Yojana. I have got a good knowledge about economic condition, of our country, by the help of 'Yojana'. It shows the bright side of life. It is very useful to us. So it is really our bossom friend.

Rajendra Pd. 'Raju'
Economic 'Honours,
T.N.B. College, Bhagalpur-7.

SIR,

The 'Hints for Housewives' that appeared on page 14 of the volume XXIV/13 dated July 16, 1980 are very useful and can serve to a great extent in saving the valuable energy which is generally wasted due to ignorance. In my opinion, it would be highly useful to print this information on a separate sheet in different Indian languages for wide distribution in India to all the housewives. A beginning can be made by distributing this information to all Government employees. I have got copies made and distributed to members of this Mission.

C. M. Bhandari
Second Secretary (HOC),
Embassy of India,
Oslo

Special Article

The Brandt Report : Points and Pointers

L. K. Jha*

THE idea that there sould be a Commission to go into the issues which divide the rich countries from the poor, and which result in a running acrimonious debate in every international forum, originated with the World Bank President, Mr. McNamara. Towards the end of the 60's too the World Bank had taken a similar initiative and constituted a Commission under the chairmanship of Lester Pearson of Canada, who, like Willy Brandt, had been the Head of Government in his own country and had received the Nobel Prize for Peace.

But while the Pearson Commission was focussing on a somewhat narrow range of issues, particularly related to aid flows and matters of direct concern to the World Bank, the Brandt Commission was expected to go into the whole range of North-South issues debated and deadlocked in UNCTAD, UNIDP, GATT and the U.N. General Assembly itself. Accordingly the formal invitation to Brandt to chair it was conveyed not by McNamara but by the U.N. Secretary General, Waldheim.

Before accepting the invitation Brandt sounded out world leaders, both from developed and developing countries, to be sure that they welcomed the idea, had confidence in his chairmanship. He also stipulated that the Commission should not be financed either by the World Bank or by the United Nations and should therefore be independent and free to be critical, if necessary, of both the institutions. He relied on voluntary contributions, large and small, from countries, poor and rich, as well as regional organisations and agencies to provide the necessary funds for the Commission's work. India was among the countries which contributed to its resources.

He also decided not to include in the Commission representatives of governments, who would be bound by briefs and instructions, or persons who were holding such positions of responsibility in their country as would make them concentrate on safeguarding their national interests. Instead the Commission included some former Heads of State/Government : ex-Prime Ministers Heath and Palme of Britain and Sweden, ex-President Frei of Chile and, of course, Brandt himself was ex-Chancellor of Germany; and also a number of ex-Cabinet Ministers. Experts in industry, agriculture, finance and economics and people with a background of business, trade unionism and the publicity media were also on it. Every thing was done to ensure that the Independent Commission on International Development Issues, as the body was formally named, was truly independent.

When Brandt invited me to join this distinguished group I was naturally flattered. But I was also sceptical about what would come out of its deliberations. What prospect, I asked myself, was there for this high-powered heterogenous group to find agreed answers to issues which had been discussed threadbare in one international meeting after another, without any accord being reached?

But the miracle did happen. Starting its work towards the end of 1977 the Commission finalised its unanimous Report in December, 1979 without a single minute of dissent on any point. This was not because from the very beginning we had a community of outlook. There were, to start with, sharp differences, even clashes, between individual Commissioners with different backgrounds on particular questions. But soon, working together in closed meetings with no gallery to play to, with informal chats supplementing formal discussions, a common approach began to emerge.

"Experience has shown that a major food shortage in any part of the world causes a price rise even in surplus areas. A crop failure in the Soviet Union has generated inflationary pressures in the U.S."

Willy Brandt made a great personal contribution to this by lifting the level of the debate and enlarging its scope to cover not just narow economic issues but the threats to mankind which loom on the horizon, especially the problems posed by the exponential growth of world population and dwindling supplies of the basic necessities for preserving human life, particularly food and energy. In his personal Introduction to the Report, he has highlighted the relationship between justice and peace, disarmament and development. The Report therefore has been called "North-South : A Programme for Survival".

Aided Self-help

Unlike the previous studies which tended to present North-South issues as a one-way traffic in which the North had to help the South, the Report emphasizes the growing area of mutual interest between the two : "We are convinced that there are gains for all in a new order of international economic relations."

*Eminent economist and Governor of Jammu and Kashmir

Of course there are moral compulsions as well but human solidarity, compassion for the suffering in poor countries, and hard-headed interests of the rich countries, argues the Report, point in very similar directions.

Surveying the fundamental problems of poverty the Report insists that the porest countries must receive special attention, "to help them to help themselves".

Apart from moral compulsions, the hard-headed interests of the rich countries also point towards helping the poor countries.

Chronic mass poverty is concentrated in two belts, one in Africa and the other in Asia. The latter include countries like Afghanistan, Napal, Bhutan and Bangladesh which are included in the U.N. list of "least developed countries", as well as parts of Northern India which have very similar conditions. Their geo-physical handicaps, which primarily account for their chronic poverty, can be overcome through a major international effort to assist them with investments in the ecological infrastructure—management of rivers, afforestation, irrigation and power generation which would entail a step-up of doller 4 billions a year in the current aid level. The improvement in agriculture, which such an exercise would bring about, would not only benefit them but would help ensure enough food for the rising world population. Experience has shown that a major food shortage in any part of the world causes a price rise even in surplus areas. A crop failure in the Soviet Union has generated inflationary pressures in the U.S. Even the richest countries would suffer if population growth is not matched by higher food production.

Side by side, population increase has got to be curbed. But "the present staggering growth will continue for some considerable time" and cannot be stabilized except over a number of years of extensive family planning efforts which must be under-pinned by broad-based development. The resources needed for helping poorer countries are an insignificant fraction of what is being spent on the arms race. The removal of non-military threats to survival is essential for security.

Of course developing countries themselves have many responsibilities. It is they who have to ensure that the benefits of development are equitably spread and, in particular, reach the very poor. International effort cannot be a substitute for but only a supplement to the national effort which the developing countries themselves must make, individually as well as collectively. But policies and attitudes in the North must change as much in the mutual interests of the rich as of the poor and, indeed, for mankind as a whole to face the emerging threats.

The Oil Crisis

The energy crisis is one such threat. The skewed ratio of per capita consumption between industrialised, middle income and low income countries, which is in the proportion of 100 : 10 : 1 must be corrected Depletion of oil reserves and importance of conserving them must mean that oil prices should rise in real terms; but they should do so predictably and gradually, with assurances of supplies to poor countries and attempts to develop alternative energy sources. The search for new reserves of oil and other exhaustible minerals must be intensified, especially in developing countries where there are vast promising areas lying unexplored for lack of resources.

The South has also an important and growing role as a customer of the products of the North and therefore for generating employment in the North. Nearly half of Japan's exports go to the Third World. One out of every twenty jobs in the U.S.A. depends on exports to the Third World. If more resources became available to the poorer developing countries, by way of capital transfers or higher exports, idle capacity and manpower in developed countries can be more fully employed. Protectionism by the North against products from the South cannot be justified in the interests of employment.

Sources of Finance

The Report deals fairly fully with the financial problems of developing countries, makes a critical evaluation of the role of existing institutions like the IMF and the World Bank. It favours more SDRs being allocated to developing countries ; profits on the large stock of gold with the IMF, whose value has shot up, being used to subsidise the cost of borrowing by poorer countries ; the World Bank decentralising its decision-making process regionally. It identifies some of the key purposes for which finance is either not available from the existing institutions or available only in very limited amounts. The World Bank's resource base should be strengthened and the scope of its lending operations enlarged in order to fill the gaps.

International taxation by way of levies on international trade, on military expenditure or arms exports, on the mining of seabed minerals and the like could provide automatic resources for development. Development assistance should be universalised : the Western capitalist countries and Eastern communist countries as well as the developing countries of the South, except the poorest, on a sliding scale related to national income, should all contribute to it. Consideration should also be given to the creation of a new institution, a World Development Fund, with universal membership and fully shared management and control, to compliment the World Bank and the IMF.

"The resources needed for helping poor countries are an insignificant fraction of what is being spent on arms race. The removal of non-military threats to survival is essential for security."

For Immediate Relief

Having outlined the major changes and reforms, which must be made in the two decades before a new century starts, the Report proposes an Emergency programme for 1980-85 which consists of four parts :

— A large-scale transfer of resources to developing countries.

— An international energy strategy,

— A global food programme,

— A start on some major reforms in the international economic system.

The Commission was very conscious of the fact that its recommendations, however sound, may remain only pious hopes with little or no impact on the policies pursued by different countries and groups of countries. In fact, when the Commission was just starting its work Willy Brandt had warned us all that it could well be that our labours result in nothing more than the addition of one more book to the libraries of the world. Inevitably, even while discussing individual issues we were giving the deepest thought to the problem of implementation.

Need for Mini-Summit

It was Willy Brandt's idea, with which we all agreed, that it is only through a summit meeting that the level of debate could be lifted, pulling it out of the rut of rhetoric and recrimination in which it had got bogged down over the years. The political will necessary to get a move on could only be generated at a meeting of the ultimate decision-makers. Of course one could not possibly contemplate a summit of all the members of the UN. But if the Heads of Government of, say, 25 countris, belonging to the North and the South, representative of different regions and different kinds of economy—as had been the effort in settling the composition of the Brandt Commission—got together and reached a broad consensus among themselves, without of course committing any country not represented, the whole atmosphere would change. Meaningful negotiations could then be resumed in the appropriate fora with full participation of all the countries concerned.

The presentation of the Report to the Secretary-General of the U.N. coincided with the failure of the UNIDO meet at New Delhi to achieve any tangible progress in bridging the widening gap—mental no less than material—between the poor and the rich. The general reaction to the Report in developing countries has in consequence not been characterised by optimism or enthusiasm. What has made matters worse is that copies of the Report have not been easily available in most of the Third World countries, including India. Such summaries as appeared in the press did indicate that the Commission had given solid support to most of the things developing countries have been urging. But the crucial question which developing countries ask, not without a measure of justifiable cynicism, is whether the North will really change its stand.

"The skewed rate of per capita consumption of energy between industrialised, middle income and low income countries, which is in the proportion of 100 : 10 : 1, must be corrected."

It would be rash to attempt any kind of a categorical response to it because there are so many imponderables. The attitude of the developed countries of the West is important: but there are others also to reckon with. When assessing the prospects of New International Economic Order, one must remember that the North includes not only the capitalist West but also the communist East; the South has a preponderance of the poor but it also includes the very prosperous OPEC, and also the so-called "newly industrialising countries" (of Latin America as well as East Asia) which fall in the mid-income range. The attitude of each of these categories will influence the final outcome.

"Nearly half of Japan's exports go to the Third World. One out of every twenty jobs in the USA depends on exports to the Third World."

Meanwhile, a joint initiative to convene the mini-summit to consider the Brandt Report has been taken by the Austrian Chancellor and the President of Mexico. With the American Presidential election taking place later this year, and also with a view to give enough time to governments to study the Report and formulate their reactions, the meeting has been scheduled for early 1981. But even before that summit there was an OECD Summit at Venice. The communique dated 23rd June 1980 welcomed the Brandt Report in very cautious terms, largely because, it is said, the British Prime Minister was not too sympathetic to the approach outlined in the Report. But at the meeting the Heads of Government of Germany, Canada, Japan and eventually the U.S., indicated their willingness to participate in the proposed summit. Since then, according to press reports, acceptances from other countries, both developed and developing, who had been invited have been received. So the meeting is on. This is a hopeful portent.

West, East Reaction

But other question marks persist. How responsive will the West be? The Western press on the whole has given considerable support to the Report. Although the British attitude is reputed to be the least forthcoming, the House of Commons had two full debates on the Report in which many important speakers urged a more positive attitude and government spokesmen demonstrably softened their position on it. In fact the Report for some weeks ranked among the best selling paperbacks in Britain, which, incidentally, is part of the reason why adequate number of copies could not reach other countries.

The low income and middle income Third World countries in general are expected to come to the summit in a spirit of constructive cooperation. About the attitude of the OPEC no clear indications are available, partly because of their preoccupation with the mounting tensions between Israel and the Arab World. An OPEC summit is scheduled to take place later this year which might result in a cystallisation of their views. However, it is important to add that the global compact, which the Brandt Report has proposed, cannot come into being without OPEC playing a major part in it.

As regards the East, none of the countries belonging to it was willing to be represented on the Brandt Commission. However, as a result of a talk between Mr. Brandt and Mr. Brezhnev, a technical level meet between the Secretariat of the Commission and some

How to Avert Global Economic Crisis

P. V. Narasimha Rao*

THERE is growing recognition that the world economy today faces a crisis of unprecedented dimensions. But the international community finds itself unable to formulate clear-cut remedies and is still groping for ways and means to cope with the crisis.

An objective analysis will lead to the inevitable conclusion that it is neither lack of comprehension, nor lack of resources that is responsible for the dismal response to successive proposals for bringing about massive transfer of resources to developing countries. Clearly, it is the lack of political will which is acting as the stumbling block to progress in this direction. It is the same lack of political will that was responsible for the string of infructuous negotiations ranging from UNCTAD V to UNIDO III, not to mention the Paris Conference on international Economic Cooperation.

Take the case of official development assistance. The record here is depressing in the extreme. As against the internationally accepted target of 0.7 per cent of GNP, the actual performance has been woefully inadequate. The ODA declined from a level of 0.35 per cent of GNP in 1975 to 0.31 per cent in 1977, though it has since risen to 0.34 per cent, it is still below the level reached four years ago and, in any case, is less than half of what was targeted. Barring a few worthy examples, the developed countries have levels of ODA which do not credit to them. What is even more unfortunate, on the present indications it does not seem that ODA levels would rise to more than 0.35 or 0.36 per cent of GNP by 1985 and this, at a time when GNP growth in the developed countries is itself slowing down. These countries, unfortunately, have not lacked the political will to increase their expenditure on armaments—expenditure which stands out in sharp contrast to the pittance that they divert to international development assistance.

Massive transfer of resource is an imperative necessity which is in the interest of the donor countries, if they wish to create suitable conditions for their own growth and prosperity. Mass poverty is both degrading and de-stabilising; its eradication is no longer a matter of charity, but security against a cataclysmic future.

Many-sided Discrimination

An asymmetrical relationship currently exists in the international monetary system in the matter of adjustment of balance of payments, surpluses and deficits. The deficit developing countries are subject to harsh and often uncompromising conditionality in the use of IMF resources in the higher credit tranches.

This is precisely the time when urgent attention needs to be given to the restructuring of the international monetary system. The new system should reflect more appropriately the current economic realities. It should provide, through discretionary and collective international action, for adequate liquidity which an expanding international trade environment would need. It should also incorporate rules for an equitable and symmetrical adjustment process and, more importantly, pay adequate regard to the legitimate needs of the developing countries. The core of this exercise is to enhance effectively the participation of developing countries in the decision-making process so that the organisation of International Finance acquires a broader base and does not remain the exclusive privilege of a few developed market economies.

One of the major aspects of the present disjunction in which the developing economies are placed is the sharp deterioration in the terms of trade of a vast majority of them. Take the example of primary commodities, which are of crucial interest to a large number of developing countries. The progress towards ensuring remunerative and equitable prices in real terms to the producers of these commodities, has been painfully slow. The decision to establish the common fund is a positive step of considerable significance to producers of primary commodities. But it has taken more than four years of intense negotiations to agree upon setting up of the fund. It will take several more years for it to become effective.

There is resistance, often objection, to any serious discussion of redeployment of world industry. While recognising that industrialisation is absolutely essential to the rapid growth of the economies of developing countries, developed countries continue to resist any movement towards restructuring of their industry vis-a-vis those of developing countries based on comparative advantage.

I consider that economic cooperation among developing countries can serve as a significant vehicle for stimulating the revival of the world economy from its present stagnation. The international community cannot but pay particular attention to the plight of the least developed countries among us. Their economies are on the verge of collapse. Urgent steps need to be taken on a priority basis to implement those special measures for the least developed countries which have already been agreed by the international community.

The question of energy is intimately inter-twined with the economies of the energy exporting as well as importing countries, the inflation exported by developed market economies and the need to rationalise consumption of energy, particularly in developed countries. In particular the developing countries are facing a major problem in meeting the demand not only for their economic development but even for sustaining daily life. The international community will have to pay special attention to the requirement of the energy importing developing countries.

The abyss of a grave economic crisis lies in front of us. As a great staeman said at the beginning of this century, "You cannot take two steps accross an abyss". If we wish to cross it, it would demand determination, understanding, right motivation, and above all, a far greater effort and bigger sacrifice than we have so far volunteered.

*Minister of External Affairs. Excerpts from his address at U.N. Special Session on August 25, 1980.

Special Article *Window on the World*

South Korea's Path To Economic Development

Navin Chandra Joshi*

THE Republic of Korea (South Korea) has a total area of 85,256 square miles of which only 20 per cent is flat land and the rest is mountainous. The country's total population in October 1978 was 36,628,485 with the rate of population increase at 1.7 per cent. In size, the country is equal to British Isles, Rumania or New Zealand. With density at 374.8 persons per square kilometer, the country is the second most densely populated nation in the world after Bangla Desh. Area under cultivation is 23.5 per cent of the total land space. The major natural resources are minerals and fishery. The employment rate has now reached 92.6 per cent of the economically active population (over 14 years old).

Since the end of the Second World War, South Korea has experienced a series of political upheavels. In August 1945 the country (Korea) was divided into two halves and occupied by the two victorious allies—the south of the 38th paralliel line by the U.S.A. and the north of it by the U.S.S.R. This joint occupation of the nation, which earlier had a colonial rule of Japan, by the two powers led to the permanent division into two hostile political entities and it remains so even today.

The under-developed countries of the world are now trying to develop themselves economicaly. Each nation follows its own method which is best suited to its genius. 'Yojana' starts a new series on the different roads to the 'Rome' of prosperity, with this article on South Korea in whose reconstruction exports and foreign investments have been playing a major role.

With the inauguration of the Republic of Korea in the southern half of the country in August 1948, with Syngman Rhee as the President, following a three-year rule by the U.S. military government, the new government made serious efforts to restore a semblance of order in the national economy. The annual per capita income in South Korea when the Rhee regime was overthrown was only about fifty dollars, one of the lowest in the world. Again, the Korean War (1950-53) broke out in June 1950 and it threw the South Korean economy into chaos. The war adversely affected the industrial potential of the country, bringing in its train an estimated loss of about $ 3,000 million in terms of national income. Therefore, the war-devasted country had to concentrate its efforts on rehabilitation and defence capability. To arrest the post-war inflation, foreign aid of the order of $ 1,170 million from the United Nations and the U.S. flowed into the country and this helped the industrial production go up by 20 per cent per annum with an average economic growth rate at 5.5 per cent till 1956.

The nation's first economic development plan (First Five Year Plan) was for the period 1962-66. This period witnessed an average annual growth rate of 8.3 per cent with GNP at 382,560 million Won (unit of domestic currency) in 1966 calculated at the 1960 constant prices. The per capita income rose from $ 96.1 in 1962 to $ 130.8 in 1966. The current Fourth Five Year Plan (1977-81) has envisaged an annual economic growth rate at 9.2 per cent through increase in GNP from 11,480,600 million Won in 1977 at 1975 constant prices to 16,214,300 million Won in 1981 (one Won= Re.1.33). The per capita income is envisaged to expand from US $ 847 in 1977 to US $ 1,152 in 1981. While exports are to expand by 16 per cent from $ 8,248 million in 1977 to $ 14,165 million in 1981, imports are to go up by 12 per cent from $ 9,023 million in 1977 to $ 13,826 million in 1981. Thus thare will be a surplus of $ 339 million in 1981 in the country's visible trade balance.

Presently, agriculture, fishery and forestry are contributing 32 per cent to national income while mining and manufacturing have a share of 30 per cent. The gross domestic capital formation is quite encouraging even with the inflation rate 12.2 per cent in 1978 in wholesale prices and 16.4 per cent in consumer prices. The economic progress of the Republic of Korea during the last decade has been phenomenal. From a position of uncomfortably close to the bottom of the international income scale and without the benefit of significant natural resources, Korea embarked upon a course of industrial growth that has now become one of the *outstanding success stories in international development.*

The rapid growth has been the result of a number of interacting economic, political and social factors which are not easy to quantify or rank by importance. There is no doubt that exoprt expansion and outward-looking strategy have played a key role in Korean deelopment. Indeed, the export of manufactured goods has been the engine of its economic growth. Today, 95 per cent of the increase in GNP is from the export of manufactured goods.

Structural changes in the economy have transformed South Korea from a largely agricultural society into a semi-industrialised country in a relatively short time. Today, South Korea is more industrialised than other countries at comparable levels

* Author and Lecturer, Motilal Nehru College, University of Delhi

of income and population as suggested by the relatively high shares of manufacuring empolyment and output in the total employment and GNP and by the fact that the country's manufactured goods now account for nearly 90 per cent of the total exports. It is true, as observed by the World Bank, that "Korea was driven by necessity to export-oriented industrial growth as a consequence of its poor natural resources and an extremely low ratio of exports to GNP, 2 to 3 per cent in the early sixties."

New Industries

Inflow of foreign investment and technology have brought into the country new lines of manufacturing industries such as petro-chemicals, electronics, plastic, oil refining and auto industry. Improved investment climate and various investment incentives have encouraged several foreign enterprises make capital investments in an independent form or in joint ventures with local entrepreneurs. Among them are General Motors Corporation, Caltex, Union Oil and Dow Chemical of U.S.; and Teijin, Sangyo, Toshiba and Mitsubishi of Japan. Besides, many other foreign-invested enterprises are operating plants in industrial complexes or elsewhere across the country. The Masan Free Export Zone was created at the port of Masan on the south coast to provide foreign investors with better industrial conditions and environment. The zone is a free industrial area where foreign investors manufacture, assemble or process export products using raw materials and semi-finished goods imported free of duty, all for export. Japan and the United States have accounted for about 70 per cent of S. Korean exports in recent years. At the same time, there is a heavy dependence on imports which is reflected in the relatively low domestic value added in exports. Though progress has definitely been made in deepening the industrial structure through development of backward and forward linkages, mainly through development of steel, petro-chemicals and shipyard industries, the import content of exports remains at a high level of around 50 per cent.

The present employment rate in South Korea is 92.6 per cent. The per capita income which was U.S. $ 847 in 1977 is expected to rise to $ 1152 in 1981. The average annual growth rate is expected to rise from 8.3 per cent to 9.2 per cent.

Sustaining an annual growth rate of say, 8 to 9 per cent during the next decade will no doubt pose a major economic challenge, especially because the external circumstances are distinctly less favourable than during the last decade or so. Nevertheless, high economic growth rate is essential not only for rapid improvement in living standards but also to secure a greater viability in the balance of payments position. In the S. Korean context, rapid economic growth has the potential for improving foreign exchange, domestic savings, employment opportunities and the value added content of exports.

The significant phenomena of S. Korea's industrial development during the last decade have been that the basis of a modern industry was firmly laid down, export markets were aggressively developed at an unusually high rate and entrepreneurial abilities of a high order were created. These accomplishments augmented S. Korea's capability in supplying increasing quantities of consumer and capital goods to the domestic as well as export markets. The low level of wages (at present one-sixth of that in Japan) gives S. Korea an important comparative advantage in labour-intensive industrial enterprises.

Foreign Investment

It is interesting to note that the pollution problem in other countries has thwarted the rate of expansion in petro-chemicals, metal smelting and ship-building. This fact has provided an opportunity in S. Korea to expand in these fields. The country has a number of regions, particularly in the south, where the population density is low and winds and ocean currents along with the topographical characteristics tend to minimise the deleterious efforts of industrial pollution.

The S. Korean economy as a whole has been faced with the problem of resource mobilisation in the recent years. The heavy investments required to sustain rapid economic growth have been well beyond its own saving capacity and therefore, dependence on external resources has been enormous. From 1962 to 1978 foreign private investments allowed by the government totalled $ 1,008,428,000 for 857 projects. In one year (1978), it was $ 148,710,000 for 51 projects. The United States and Canada head the list of countries which have invested. A total of US $ 2582.4 million commercial and investment loan was taken by the country in 1978 for different sectors from different agencies like the World Bank, the I.M.F., Asian Development Bank, etc. and from some countries.

With a view to encouraging foreign capital, the Economic Planning Board of the country has laid down criteria for acceptability of foreign investment. Their important features are as follows:

(a) Large scale projects in fields of metals, machinery and electronics industries, export-oriented projects, projects which contribute to the development and effective utilisation of domestic resources, and projects which are urgently required to undertake for import substitution because of insufficient domestic production—in the case of these, although there is no legal limit on the share of foreign participation in an investment, the Government prefers joint ventures to 100 per cent foreign ownership. In principle, foreign equity is allowed upto 50 per cent.

(b) Exception would be made in case of industries which produce commodities exclusively for export and do not compete with existing S. Korean enterprises or other multinationals which have been given exclusive rights.

(c) For the first five years there is no tax on foreign investment and it is at 50 per cent

rate for the next three years. Unlimited remittance of profits is guaranteed, including repatriation of principal after two years of commencement of business operation.

Future

The re-emergence of uncertainty of foreign resources and the future trends in international trade have made it necessary for S. Korea to reassess its plans and review its development strategy. The targets of per capita income of US $ 1,000 and exports US $ 10 million by 1981 have assumed only a modest annual rate of inflation of 5 per cent. Therefore, the strategy for attaining these objectives calls for a major shift in production and exports through the expansion of textiles, chemicals, steel, shipbuilding and electronics industries. The macro-economic framework for 1972—81 prepared by the country's Economic Planning Board has also projected the almost complete elimination of dependence on foreign savings by 1981. The recent sharp rise in energy cost, the increased scarcity of foreign exchange and capital resources, uncertainty about S. Korean access to the Japanese market, and last but not the least, the soaring price of imported machinery and equipment, all these need a close scrutiny in respect of the sectoral targets of production.

It can also be said that the main determinants of the level and pattern of industrial growth in the future will be trade policies and incentives, research and development, and the industrial planning framework. Today there is an urgent need for planned rapid expansion and diversification of S. Korean industry and the deepening of its structure. The strong emphasis on heavy industries is not inconsistent with this need as substantial expansion of labour-intensive industries has also been planned for. A factor adversely affecting the employment target, however, may be that with wages rising more quickly than in the past, employers may tend to increase investment in labour-saving capital equipment.

To conclude, in general the present economic outlook for the Third World countries is bleak with worsening terms of trade and slower overall growth. The net indebtedness of non-oil exporting developing countries has worsened further. It is now high time that a set of policies to meet the global inflationary situation is put into operation. The developing countries need to adopt better domestic policies to deal with the very difficult situation they face and to establish an environment attractive to foreign investment and financing. Today the developing countries are fighting heroically for a new international economic order that could help both the developed and the developing countries. This much-talked-about new order is such that the developed countries reap a more than proportionate share of prosperity and advancs in technology. Consequently, the eye-catching and ear-catching parts of the dialogue have been largely concerned with a number of unrealistic demands aimed at fundamentally changing the existing structure of the world economy. The recent study by the United Nations Division for Economic and Social Information points out that the structural weaknesses can be overcome only by organisational and institutional innovations which would augment the production and bargaining capacity of the developing countries, singly or collectively over a period of time. □

The Brandt Report

(Contd. from page 8)

important academics in the Soviet Union did take place. What is even more significant is that among the many languages into which the Brandt Report is being or has been translated, such as French, Spanish, Arabic, Dutch and Japanese, Polish is also included; most people regard this as a favourable straw in the wind. If I may hazard a personal view, while the Soviet Union may not participate in an exercise lebelled "transfer of resources", it could well be forthcoming with sizeable credits to finance the kind of projects for which its technology and machinery may be most helpful, such as construction of major hydro-electric dams.

Perhaps, but not necesarily, on the negative side, account has to be taken of the rapidly worsening conditions of the world economy. Recession, inflation and unemployment are afflicting most of the developed world. The danger that they may seek shelter from these through inward-looking protectionist policies cannot be ruled out. But equally there is the possibility that the gathering of top statesmen may recognise that these problems can be better solved or perhaps be only solved through global cooperation. An interdependent world economy cannot forge ahead if independent national policies continue to pull it in different directions.

Members of the Brandt Commission were not starry-eyed visionaries. Many of them, if the Report had been submitted some years earlier, would have been participating in the very summit that it has recommended. The threats to the survival of mankind, which loom on the horizon at the turn of the century to which the Report draws attention, cannot be summarily brushed aside. As Brandt argues in his Introduction, "It is in this time of crisis that world issues must be faced and bold initiatives taken.......... it seems to be a permanent task for man to shape order out of contradictions". □

London 'Economist' on Brandt Report

Commenting on the Brandt report, the prestigious British weekly 'Economist', in its issued dated August 23, says, that the proposed mini-summit might be successful if its deliberations are confined only to two questions : energy and finance. Regarding the report itself, the 'Economist' says : "Certainly the Brandt report has passed one crucial test that so many similar reports fail : six months after the initial hullabaloo of its publication it is not gathering dust. Some of the numerous changes it recommends for the world's economic system have to be taken seriously by governments, and the summit could prove to be the most important of these. Most of Brandt's 18 signatories from both north and south were themselves senior—but out-of-office—politicians; get together the ones in office, the argument runs, and they may push some changes through."

Gandhi Jayanti Special

The Place of Khadi & Village Industries in National Economy

A. M. Thomas *

AS is well-known, Gandhiji introduced Khadi in 1920 primarily with a political intent to make the boycott of foreign goods in general and cloth in particular effective and provide an opportunity to every man, woman and child for self-discipline and self-sacrifice as a part of Non-cooperation Movement. Since then the conceptual approach and the consequent institutional framework underwent a series of changes based on the actual experience and experiments and in the process pervading the entire socio-economic and political structure of the country till the last moments of his epoch-making era.

The various facets of Gandhiji's concept of Khadi—"the sun of the whole industrial solar system," can be summed up as follows :

1. Key to Swaraj (Livery of Freedom)
2. Means of mass education
3. Link between masses and classes
4. Symbol of dignity and manual labour.
5. Means for securing more even distribution of means of living.
6. Check on drain of wealth to foreign countries.
7. An occupational therapy for psychic illness afflicting the West.
8. Emblem of non-violence.
9. Force for international peace.
10. An instrument for village reconstruction

On the institutional framework plane, the programme was implemented through the trusteeship concept and co-operative endeavour which brought into sharp focus, the non-profit making and non-exploitative characteristics. Emphasis on providing living wage was also introduced subsequently.

As to the economic viability, Gandhiji's reply was "Khadi is the only true economic proposition in terms of millions of villagers until such time, if ever, when a better system of supplying work and adequate wages for every able-bodied person above the age of 16, male or female, is found for his field, cottage or even factory in everyone of the villages in India, or till sufficient cities are built up to displace the villages so as to give the villagers the necessary comforts and amenities that well regulated life demands and is entitled with".

Towards the end of his life, the Central theme of his new approach which he called as "Samagra Seva" was, "Khadi could have a permanent effect only when carried out as a part and parcel of the wider programme of non-violent village uplift or village re-construction and that Khadi should be made a part of the development of village industries and also of agriculture, animal husbandry and other rural activities"

Under the Plans

The above basic concepts of Khadi and Village Industries in the national economy continued to be the guiding goals in the post Gandhian era also. In fact, they are relevant even today. With the launching of the five year Plans, probably for the first time, an effort was made to view the difficulties and problems of development of village and small scale industries from an all India angle and in an integrated manner. The general approach was one of rehabilitating these industries as to provide the rural population, additional employment and opportunities of supplementing their earnings.

At present Khadi and Village Industries provide employment for about 29045 persons. This figure is proposed to be doubled in the Sixth Plan period.

On the organisational side, the establishment/reconstruction of six all-India Boards was an important step taken for planned development of village and small scale industries. They were set up with a view to formulating, guiding and to an extent implementing co-ordinated programmes for development of small scale industries, handloom industry, khadi and village industries, handicrafts, coir and seri-culture.

The All India Khadi and Village Industries Board was transformed into the Khadi and Village Industries Commission by an Act of Parliament on 1st of April, 1957. The primary functions of the Commission were generally to plan, organise and implement programmes for development of Khadi and Village Industries as per the schedule of industries brought under the purview of the Commission and industries to be added in subsequent years.

The functions of the Commission are wide and varied, viz., to subserve the class of rural artisans coming under its purview, by building up reserve of raw materials and improved implements and supplying them at economical rates to increase the productivity, extend training facilities for improving the techniques of manufacture and quality of the products,

* Chairman, Khadi & Village Industries Commission.

provide a suitable organisational base for wider market outlets. The patterns of assistance and institutional framework for implementing the programmes, which are mainly done through registered institutions and co-operatives, suit the requirements of and provide work opportunities to, the poor families at or nearby places where they reside.

An important feature of this activity is very high participation ratio of women folk who contribute substantially to their family income. The Commission has also adopted liberalised patterns of assistance for development of weaker sections in the backward nomadic tribes etc., and displaced persons from Pakistan and former East Pakistan. These patterns are also applicable to hill and border areas.

Modern Achievements

On the technological plane, eversince Gandhiji's time, there has been considerable stress on technical improvements in the traditional implements used by the rural artisans to increase the productivity and the quality of the products and to enhance their earnings without displacing them from their occupation. As a result of intensive laboratory research and field trials, a series of new machines, equipment and implements, power operated or otherwise have been evolved and are being introduced on a wider scale in large numbers with the progress of years, to reduce the cost of production, improve the quality of the product and enhance the productivity and earnings of artisans. They can now earn anything between Rs. 3 to Rs. 10 or even more per day depending on the type of activity which they take up.

The K & V Commission has been a pioneering agency in inducting 'Appropriate technology' in the countryside.

Thus, in a country where even after three decades of planned development more than half of the population is living below the poverty line, the level of employment and earnings provided in the Khadi and Village Industries Sector is contributing in a very significant way for bringing this category of persons much above the poverty line.

In a sense, the Commission can take pride that it has been a pioneering agency in inducting intermediate/appropriate technology in the countryside. Six and twelve spindle new model Charkhas, semi automatic looms, paddy dehuskers, gear shellers and rice polishers, small solvent extraction plants, improved potters wheels, irrigation pipes, cheaper variety of cement (limpo), technique of the manufacturing of utility and quality delux safety matches, leather goods (that have attracted consumer preference in a big way), manufacture of Muslin (finer counts) Khadi reviving the memories of 'Dacca muslin', modern scientific method of bee keeping, installation of bio-gas plants for providing light, enriched manure to the rural folk at cheaper cost as an alternate source of energy that has obtained international commendation are some of the landmarks in popularizing the improved technology in different industries under the purview of the Commission.

Another notable contribution has been the help extended to developing countries such as Tanzania Mauritius etc. in setting up the type of industrial units and extending technical guidance, supply of machinery and equipment, training, etc.,

Phenomenal Impact

The overall impact of the organisational, financial and technical efforts put in by the Commission in respect of the Industries under its purview for two decades now can be summed up as follows:

Organisation	1955-56	1979-80 (Provisional)
1. Number of industries under the Purview of the Commission	13	25
2. State Boards	15	24
3 Registered institutions	861	739
4. Cooperatives	541	27,842
5 Production (Rs. crores)	16.47	412.65
6. Employment (lakh persons)	9.64	29.45
7. Earnings (Rs. crores)	16.92	123.97

From the above it may be seen that the number of industries under the purview of the Commission have been doubled. The total number of implementing agencies as well as value of production have increased by about 20 times. Employment opportunities and the per capita earnings have registered a rise by over three times and seven times respectively.

This performance impressive as it is, still underlines what is yet to be done in the field of Khadi and Village Industries looking to the potentialities of resources available and the number of traditional artisans yet to be covered.

Future Tasks

So far, the Commission has been able to extend its activities to about one-fourth of the total villages in the country and nearly one-third of the total traditional artisans falling under the purview of the industries in its fold. Full coverage of these artisans in the current Plan period and generation of new employment opportunities, (b) extending assistance to entrepreneurs and individuals directly, (c) arranging for credit through institutional finance to bridge the gap of financial resources between the actual requirement and the budgetary provisions from the Government of India (d) intensification of R & D efforts in colloboration with national Research Institutes to bring about further improvement in the machinery and equipment and processes of manufacture, and managerial efficiency of the implementing agencies etc. (e) a selective approach

(Contd. on page 29)

Special Article

Planning For Secularism

Badr-ud-din Tyabji*

SECULARISM, the most discussed, if not sought after concept, and yet the most elusive ingredient in our society, is not even mentioned in our Constitution. On the other hand, its protagonists can with justification point out that the whole burden of our Constitution is weighted in its favour; it's endeavour is to promote it in all aspects of our life.

Though a less surprising manifestation of this schizophrenic attitude toward "Secularism", but one infinitely more damaging to its cause, is the total absence of any attempt in our planning processes to promote it. The working out of ways and means by which this ideal could best be turned into a reality is evidently not considered a fit subject for planning

The omission of any direct reference to secularism in both these contexts, that of the Constitution and in planning, is obviously not due to an unawareness of its importance, or the need of promoting it. There seems to be some arcane psychological reason for it Is it because we are so obsessed with the idea. so desirous that the world and our own conscience should accept it as a *fait-accompli* in our society? Do we wish not even to refer to it as an objective; for fear that it might raise uncomfortable doubts (most of all in our own minds) of its not having been truly realised ?

Anyway, it does seem that the urge to consider the wish in regard to the fulfilment of such national ideals as those of "Secularism", the "Unity of India", "Composite culture", our "Peace-loving nature", our "Goodwill towards all people", our, "Internationalism", etc., as a reality is so overpowering that it outstrips our capacity to be realistic about them.

This is in good part the outcome of the propaganda that we had to do in pre-Independence British times During our struggle for Independence we had to convince not only the British, but ourselves that we possessed all these attributes in full measure Otherwise it would have been well-nigh impossible to impose our will on the British public regarding our fitness for self-government, for functioning as an independent nation.

And above all, we had to convince ourselves that we were fit for exercising all the prerogatives and responsibilities of full self-government. Without such a faith in ourselves we could not have developed the self-confidence and plan required to confront and overcome British scepticism and distrust of our capacities.

We, therefore, convinced ourselves first that we had all these attributes in ample measure, and then tried it on the British. We could convince them only partially; hence Partition. This was a great blow to our self-esteem and to many of our most cherished beliefs and illusions: that by constant reiteration we had begun to accept as self-evident realities, without ever putting them to the test or subjecting them to unbiased examination.

*Eminent Writer

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Partition, indeed, instead of bringing about as one would have expected such a heart-searching, pushed it even further back into the limbo of our conscience. Partition, in fact, made it more urgently necessary than ever for us, politically, internationally, and morally not only to proclaim the ideal of secularism, but to claim that it had been fully realised in India.

This was necessary at home to squash the rise of anti-secular elements in our country that had begun to raise their heads encouraged by the back-lash of Partition, and the heavy influx of refugees into India from an anti-secular Pakistan. It was equally necessary abroad. We had to counteract the corrosive effects of the propagation of Pakistan's two-nation theory poisoning our relation, in particular with our neighbouring Islamic States.

In this attempt we were again caught in a vicious circle. We were inhibited from taking any real practical measures for turning into reality our ideal concept of secularism, by an unconscious fear that by taking any overt measures to this end, we would be demonstrating the skelton in our national cupboard; the hiatus between our ideals and our achievements; what we have been claiming and what in fact is the reality.

Positive Action Needed

However, this may be, it is high time now, to overcome or set aside all such inhibitions. We must work out concrete and practical measures, the effect of which should be to project the concept of a secular society in India as a living reality in all aspects of the nation's life For this purpose, it would be necessary to consider the effect of the implementation of all administrative measures from the secular point of view, whether they lay in the field of economics, politics, education, culture or social welfare. All our development plans should have in-built monitoring systems to show how far, through their implementation, they were fulfilling the secular norms we had set for ourselves, to what degree they would promote national integration, better understanding between the different people, culture, ways of life, etc., of the heterogenous population of India.

The promotion of secularism should become as fundamentally an axiom of our planning as is our proclaimed upl'ft of the weaker sections of the population.

In brief, the promotion of secularism should become as fundamentally an axiom of our planning as is our proclaimed uplift of the weaker sections of the population.

Truth to tell, there can be no real uplift of the weaker sections of the population without a fair and full implementation of secular ideals in our society. Most of the handicaps from which the weaker sections of the population suffer arise from the denial of opportunities to them by the more dominant elements; the discrimination exercised against them because of a breakdown in the operation of the secular norms of our society.

Performance of State Financial Corporations

R. S. Rangarajan*

THE State financial corporations are playing a significant role in the institutional financing of the industries in the country. The volume of assistance rendered by them in recent years has substantially increased, from Rs. 103.1 crore in 1973-74 to Rs. 166.1 crore in 1977-78. At present, the corporations have focussed their attention to the development of the small-scale industries and the backward districts in their respective States.

In this article, a comparative analysis of the operations of three state corporations has been made to assess the level and extent of their recent performance. The corporations are: the Maharashtra State Fiancial Corporation (MSFC), the Gujarat State Financial Corporation (GSFC) and the Tamil Nadu Industrial Investment Corporation (TIIC).

The three corporations are emerging as a major source of funds for the industries, as more than 40 per cent of the total project cost is met by them (Table I). It has been found that the MSFC has distinctly emerged as the major source of funds for the medium and small industries in Maharashtra.

Table 1

Financial aid sanctioned by the corporations in 1977-78

(Rs. lakh)

Name of the Corporation	Cost of projects	Financial aid sanctioned	Percentage
MSFC	4950	2756	55.7
GSFC	6062	2336	38.5
TIIC	2723	1186	43.5

From the details of the sanctions and disbursements in 1973-74 and 1977-78, it has been noticed that there was an absolute increase in terms of the amounts in 1977-78 as compared to 1973-74. The extent of the increase, in percentage terms, shows that there has been a substantial enhancement both in the sanctions and disbursements. However, the extent of the increase was 100 per cent in case of the disbursements. Further, the increase in respect of the TIIC was nearly double the other two.

Improvement in Disbursements

In terms of the ratio of the disbursements to the sanctions, it is observed that it has improved quite considerably in 1977-78 as compared to 1973-74. This is indicative of the improved efficiency of appraisal of the projects by the corporations. The performance of the TIIC is striking in comparison to the other two corporations. notwithstanding the fact that the past sanctions might have been disbursed during 1977-78, as the increase is substantial.

*Research Scholar in the Department of Commerce Saugar University.

For developing the small industries and the backward districts the corporations have introduced a scheme of concessional financing. The MSFC and GSFC are also implementing the Central subsidy scheme for industrial units located in the backward areas. It is worthwhile, therefore, to assess the level and consistency in their operations regarding these promotional activities. For this purpose, a five-year analysis of the sanctions in respect of these activities has been made in Table 2.

Table 2

Percentage sanction of Loans to Small Units and Backward Districts

Corporation	1973-74	1974-75	1975-76	1976-77	1977-78
MSFC					
SSI*	54.5	42.5	57 6	50.2	63.2
BD**	33.2	34.0	35.7	39.5	39.7
GSFC					
SSI	63.6	67.7	69.4	77.4	69.6
BD	39.8	39.2	53.9	55.1	43.6
TIIC					
SSI	39.5	35.2	34.3	45.5	50.3
BD	56.6	50.8	51.3	63.5	87.3

*Small-scale industry.

**Backward districts.

Increased Trend in Assistance

A general trend in the increased assistance to the small industries and the backward districts is indicated in Table 2. However, in respect of the MSFC, it is observed that, while the assistance has been fluctuating in relation to the small industries, the same has been steadily increasing in regard to the backward districts. In case of the GSFC, it is noticed that, barring 1977-78, the sanctions reveal a gradually increasing trend in respect of the assistance to the small industries and the backward districts as well. The assistance to the small-scale industries is more pronounced. As regards the TIIC, it is seen that, there is a distinct shift in the assistance to the backward districts The same is not true in regard to the small-scale industries. Thus, it is revealed that while the assistance has been increasing, the level of performance varies between the corporations. Therefore, it could not be said that the corporations have become favourably disposed towards the small industries and the backward districts.

The analysis leads to the conclusion that the introduction of the concessional financing and other benefits have not significantly helped in diverting funds for the development of the small industries and backward districts. Perhaps, the schemes are inadequate; or there are other factors which can explain the failure of the schemes to attract the entrepreneurs in large numbers The latter appears more plausible, as finance is not the only factor necessary for initiating industrial development. □

STEP BY STEP

Intensive Educational Project

TO make use of school broadcasts more meaningful and effective, under the strict supervision of educational experts, a District Educational Project has been functioning at Jalgaon in Maharashtra. It is the only one of its kind in India. The Project has provided radio sets to 211 schools.

The project officer visits the schools to supervise the listening of the lessons. The Pune station of A.I.R. prepares the lessons according to the syllabus prescribed for each class. An advance programme for the entire academic year is communicated to the schools. In consultation with the radio station, the Project Officer has brought out a booklet containing the details of each day's programme which helps the teacher in conducting the radio class.

The radio lessons have been found very beneficial to both the teachers and students. Though they cannot replace the teacher, the broadcasts provide a very good opportunity to the teacher and the taught to learn correct way of pronunciation and singing a poem.

Encouraged by the success of the scheme, the Project envisages to extend the radio lessons facility to a total of 1400 schools.

Fast Loading Equipment For Vizag port

VISAKHAPATNAM Port can now handle bulk cargos with the help of Front-end-loader having a loading capacity of about 7 tonnes per minute.

The Rs. 20-lakh wheel loader manufactured by the Bharat Earth Movers Limited, Bangalore, a public sector undertaking has a standard 4.5 cubic metre capacity general-purpose bucket. The loader has an engine of 300 H. P. at 2100 R.P.M. and can reach to load into truck wagons upto a height of 3.4 metres. In an approximate cycle of 40 seconds it can load 7 tonnes of cargo equivalent to the capacity of truck. A 55-tonne box railway wagon can be loaded in about 8 minutes.

Electricity From Gobar Gas

SHRI Man Mohan Prakash, a young student of Central School, Banaras Hindu University has invented a gobar gas cell battery which generates 1.5 volts of electricity sufficient for a transistor set of radio. Fifty grams of gobar is enough for this cell which runs for six months. He says that the day is not far when we will use these cells to run fans, TV sets etc. This is a valuable contribution of the development of the sources of energy.

FPO, Varanasi.

Coal Scientist Award 1979

SHRI B. K. Mazumdar, Deputy Director, Central Fuel Research Institute, Dhanbad is selected for the Senior Coal Scientist Award for 1979. To encourage R&D in Coal Science and Technology, the Union Ministry of Energy instituted in 1979 two annual awards—Senior and Junior—for meritorious research in the field of basic research and development in Coal Science and Technology including energy development.

Shri B. K. Mazumdar, 55, has to his credit seventy papers, a dozen reports and six patents Current research interests of Shri Mazumdar and his colleagues relate to establishing the efficacy of a new direct coal based fertilizer, new method of demineralisation of coal and prevention of autocombustion in coal stacks and seams, on all of which original contributions have been made through published papers/patents.

TRENDS

Rajasthan Irrigation Project

THE Sawan Bhadon irrigation project in Rajasthan, has been approved by the Planning Commission.

Estimated to cost Rs. 418.88 lakhs, the project is planned to irrigate an area of 4,908 hectares annually in Kota district of Rajasthan.

The project envisages the construction of a storage dam near village Semlia in Samgod Tehsil of Kota district of Rajasthan across river Aru, a tributary of river Kalisindh in Chambal basin and a main canal taking off from the reservoir on the right flank.

Power For Backward Areas

SPECIFIC loan assistance exceeding over Rs. 10.58 crore is sanctioned by the Rural Electrification Corporation for village electrification in the under-developed and backward areas of Madhya Pradesh, Bihar, Orissa, Uttar Pradesh and Maharashtra.

The Rural Electrification Corporation has so far approved 3,626 rural electrification projects involving an aggregate loan assistance of about Rs. 1,266 crore. Together, these projects envisage electrification of about 1.75 lakh new villages and energisation of over 13.8 lakh irrigation pumpsets in 21 States.

Beta Naphthol Plant At Bokaro

THE sulphonation unit of the Beta-Naphthol plant (capacity 660 tonnes/year) was inaugurated on 10th August, 1980, in the Bokaro Industrial Area. National Research Development Corporation provided a financial grant of Rs. 25 lakhs for this project costing nearly Rs. 1.30 crores. The entire plant except the Fusion Pot was built with Indian equipment, machinery and the know-how developed by the Central Fuel Research Institute. The Beta-Naphthol Plant utilises the raw materials namely Naphthalene, Sulphuric Acid, etc., which are obtained as byproducts from the Bokaro Steel Plant.

Health Volunteer For Each Village

EVERY village in the country is to have its own Community Health Volunteer (CHV) by 1982-83. By the end of June 1980, a total of 1,45,139 CHVs have been trained. The CHV scheme has been extended in its third phase to 723 Primary Health Centres (PHCs). The scheme in its first and second phases, had already covered 1698 PHCs.

WITH the advent of scientific and technological revolution in the country, the productivity and production patterns of crop like cotton, jute, banana, coconut, linseed, pineapple etc., have been undergoing witnessing a sea-change. As a result of endeavouring for increased production of main product, the proportion of byproducts in terms of weight and volume also increase simultaneously. While the main products are profitably utilised, the by-products often pose a problem of disposal, storage and pollution. However, the skill of man in search of scientific techniques has demonstrated that the technology will never let down the mankind. Our laboratories under the guidance of Council of Scientific and Industrial Research (CSIR) and the Indian Council of Agricultural Research (ICAR) have developed economic and perfected that technology and techniques for and profitable utilisation of fibres available from these crops, the advantage of which should now be taken by the District Industries Centres in various districts in the Country. This would, in the ultimate analysis, result into

The export of Coir fetches about Rs. 17 Cr to over 5 lakh people mostly engaged in

Economic Utilisatic

A

Making ropes by hand is a habit. In the background is the Sannhemp Pant.

more employment in the rural/semi-urban areas, more economic and profitable utilization of by-products to generate more income and help reduce the problems of disposal and pollution in the countryside.

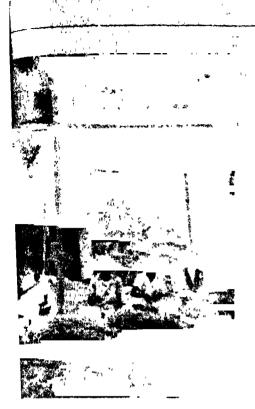
In India, cotton, jute, sann hemp, dekkan hemp, agaves, coir and palm fibre are commonly used for various purposes. Of these, the last three are not fully exploited. Besides, banana fibres, pineapple fibres, linseed straw, jungle hemp, milk-weeds and the like are not exploited at all though they do possess a minimum fineness and strength for spinning and bending needed for brush making and the required resiliency for making mattresses, mats etc

Coir Products

Coir is the natural fibre extracted from the outer covering of coconuts. It is used in the floor covering, curled coir, bristle fibre, rubberised coir products, ropes etc. The export of the fibre fetches about Rs. 17 crores in foreign exchange and provides employment to over five lakh men and women mostly engaged in the cottage industry. The area under coconuts is about 9.78 lakh hectares. The yield of nuts is estimated at Rs. 300 crores. The coir is extracted from husks of coconuts. Of the husks, only 40—45 per cent are utilised for commercial purposes. The rest is just used as fuel. In all. three types of fibres are produced from the husks viz.; mat-fibre, bristle fibre and curbd fibre. Mat coir is mainly extracted from green husks Kerala possesses all the required advantages and as such, 80 per cent of the husk produced is utilised for getting coir well-suited for spinning, weaving and rope making. Curled fibre is used for making mattresses and unholstery. Bristle-fibre is employed in the manufacture of rubberised goods. There is considerable scope for establishing more units for producing bristle and curled fibres with a view to creating larger employment opportunities.

Leaf Fibres

Agave fibres have now become the world's most important leaf fibres. Some 15 countries are the prominent producers of this fibre. Though India is one of the premier countries to have successfully naturalised them. we import them from Tanzania and other countries. It is estimated that we have considerable area under agaves capable of producing fibres valued at over Rs. 15 crores. We have 15 plantations of agave, and most of the other areas under agave plant are scattered along fences, Railway lines, etc. They also

*Agricultural Finance Department, Bank of Baroda, Bombay.

oreign exchange and provides employment
ge industry.

# of Various Fibres

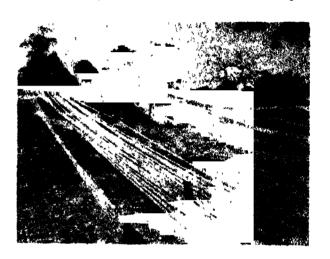
grow on barren hills in different parts of the country. It is reported that the leaves wasted in Karnataka alone would suffice not only to stop imports but also to qualify for exports. Apart from the regular plantations, hardly 10 per cent of the available leaves are utilised. New methods of extracting fibres have been developed which if widely popularised would certainly provide additional employment to traditional workers who are mostly harijans. The conversion of the leaves which are unutilised and wasted at present would add to about 20,000 tonnes of fibre valued at about Rs. 5 crores.

Tissue Paper from Bark

The bark of linseed plant contains a valuable fibre known as flax in the commericial world. In tropical countries it is used mainly as a cordage fibre. It is good for manufacturing paper and pulp-cigarette tissue papers. Many other varieties of superior paper can also be manufactured from it. We have about 36 lakh acres under this crop; half of which are in South India. The loss by way of wastage is estimated at over one lakh tonnes, which in terms of money is around Rs. 10 crores. Employment can be found for about 15,000, persons working in their own houses with an investment of Rs. 250 per worker in South India alone.

Experiments at the Jute Technological Research Laboratory (JTRL) Calcutta, have shown that banana and pineapple leaf fibre has good textile properties, superior to jute fibre in some respects It can be processed on jute machinery. It is estimated that banana plantations can yield about two lakh tonnes of fibre annually. At present only a small quantity is actually extracted manually and is used in the cottage industry for making ropes, hand bags and other fancy items.

Banana Fibres

The studies have revealed that although banana fibre is much coarser it has good strength and a non-meshy structure with well separated long filaments. Techniques have been developed for processing and spinning the fibre on the standard jute machinery. Conventional products like hessian and sacking have been successfully made from the banana fibre yarn.

Ropes are spun from Sann hemp Fibre.

Rope made mechanically from the admixture of banana fibre (40 per cent) and aloe fibre has been found to be of good quality.

The area under banana plantations is about six lakh acres, with around 60 crore plants. The plants are cut down after harvesting the fruits and thrown away in at least 80 per cent of the cases. The stems thus thrown away contain useful fibres suitable for (i) the manufacture of fancy articles, (ii) spinning and then weaving into mattings, carpets etc., (iii) cordage useful for ordinary purposes though it is not as strong as agave coir or jute (iv) stuffing and (v) paper pulping for craft paper, lacquered boards, insulation paper, toys, papier mache articles etc. At present, banana fibres are available in three qualities The fint quality silken in appearance is suited for the manufacture of fancy articles. About 2000 people are engaged in this activity at present. The scope for further employment in it is limited. The second quality is suited for the manufacture of yarn, carpets and mattings. Very simple implements have been devised for this type of work and at low cost.

Two women workers can convert about 80 stems into strips and spread them out for drying in a day. On an average a stem yields one kg. of dried material. Thus, the day's qutput for 2 women is about 80 kg. Two men working for 8 hours can convert them into fibres with the help of a decorticator operated by a

2 hp. electric motor. The production is 25 kg. of the long fibres and about 20 kg. of tows. The long fibres are suitable for cordage. Even if fibres are to be used only for paper manufacture, the products would be worth Rs. 45 to 55 per kg. In terms of employment, a band of 2 men and 2 women would require a plantation of 40 acres to keep them employed for 240 days in a year. The investments would be about Rs. 4000 *and the production would be 10 tonnes of* material for each band of 4 workers i.e. worth Rs. 10000. Thus, 10 lakh acres can employ 60,000 men and 60,000 women and produce about three lakh tonnes of fibres worth Rs. 30 crores.

Jute Sticks

Jute-stick is an important bye-product of the jute crop (80,0000 hectares) and is, at present, by and large wasted. In terms of quantity 2.5 m. tonnes of jute stick is available as a bye-product. Jute stick can be utilised in the manufacture of mechanical pulp the chief ingradient of newsprint. For every quintal of jute fibre, about 2.5 quintals of sticks are produced. Only a small quantity of jute sticks is used as fuel, the rest goes practically waste. The JTRL, Calcutta has developed processes for manufacturing paper and boards of various kinds using sticks as the raw material. The technology is so simple that village level co-operatives can adopt it. Processes have also been evolved for producing pulp from jute plants kept for extraction of seeds. The pulp produces quality kraft paper.

The JTRL in collaboration with the Bombay-based Cotton Technological Research Laboratory (CTRL) has successfully spun blankets from jute broad loom caddis in blends with cotton waste in the existing cotton waste system without any modification. The blended blankets have strength and thermal insulation comparable to pure cotton blankets. Technology is also available for preparing non-woven decorative fabrics (for well covering and window screen) from blends of jute and cotton wastes. The window screen material manufactured at the JTRL has sucessfully been tested for one year and well covering material laminated with paper has shown good demand in the country as well as abroad. Non-woven fabrics prepared from raw and blended jute waste and cotton waste, when treated further with low-density polythylene to obtain a kind of plastic-coated material, has been found to be a cheap substitute for rubberised cloth and tarpauline. The product has attracted attention for possible use in canal lining and civil engineering works. The improvements made in the process of woolenisation of jute has rendered it possible to blend it with wool for making blankets, wrappers and also for knitting yarns of quality similar to pure wool. The blended products are likely to be cheaper and suitable for the poor. It is reported that a mill is being set up at Jhargram (West Bengal) in technical collaboration with the JTRL for manufacturing wool and woolenised jute blended products.

The growing popularity of pineapple cultivation has increased the possibilities of production of fibre from leaves. The fibre processed on jute machinery by adopting special techniques has shown satisfactory physical characteristics. It can be used for making curtains and other furnishing fabrics either alone or in admixture with jute.

Milkweeds

Milkweeds are a genus of about 6 spices of shrubs or small trees dispersed in Asia and Africa. Three species occur in India of which calotropis gigantea and Colotropis procera are of economic importance. They yield latex. Their barks yield strong fibres. Their seeds bear a glossy, light floss of a comparatively short staple resembling silk cotton. The fibre in the bark is white, silky, strong and durable. It is used for making fishing nets, lines, bow strings, twine and ropes. There is adequate market for this. The plants are found on a large scale in Barmer, Jaisalmer and Bikaner districts of Rajasthan. They are also found on a small scale on the sea shores, river banks, waste lands and in fileds where they are treated as unwanted weeds and are destroyed. They grow throughout the year. The production per day per man is about 1.5 kg. of fibre.

In India, the floss is substituted for Kapok (silk cotton) if adulterated with it. Lustre and softness are among its properties. It has a high degree of insulating value. When properly processed, it finds use in the manufacture of lifebuoys, life belts, waist coats and other life saving equipment and also as padding for pillows and mattresses. Except in Rajasthan, the barks and even the floss do not find any use. They are allowed to go waste. Even in Rajasthan, only a very small quantity is converted for use as ropes, binder twines and strings for weaving cots. Milkweed is mostly a desert plant. Thousands can find gainful employment if suitable hand machines for extracting the fibre are devised. The existing implements do for spinning and weaving.

These are a few of the fibrous raw materials available in the villages as by-products of the agricultural and horticultural industries. At short distance from the forest villages lie large quantities of materials that give excellent fibres as for instance, bhang or junsle hemp available in the western parts of Himalayan valleys and slopes. When retted properly the junsle hemp barks yield a fibre suitable for all purposes. In the valleys and slopes of the western and eastern ghats, plants such as Zingiberceae, the canna, wild tunneric, maranta, of the wild arrow rot grow which yield a very good fibre suitable for paper pulping. All varieties of palm give brush and bristle fibres which can offer employment to forest dwellers. ☐

Planning For Secularism

(Continued From Page 15)

Again, much of the misunderstanding and conflicts that arise between the various sections of our population are due to their mutual ignorance of each other. This can only be remedied by positive steps being taken, in the educational and cultural fields in particular, to create a secular climate for the study of Indian civilization, culture and history.

It should be the prime objective of both our short-term and long-term planning to initiate and monitor positive measures to ensure that all developmental aspects of our national life are governed by the ideals of secularism and not of sectarianism, so that through their implementation the nation is integrated, not only physically but morally and spiritually. ☐

Pulses Pose Challenge To Indian Agriculture

K. Prasad*

THERE is wide disparity with regard to growth in production, productivity, area under irrigation and total gross cropped area in respect of cereals and pulses. A long term analysis of the available data regarding cereal production reveals that during the period betwen 1955-56 to 1978-79 there has been substantial step-up in production from 57.6 million tonnes to 119.2 million tonnes including spectacular growth in two major cereals viz. rice and wheat which have increased by 88.1 per cent and 293.3 per cent respectively. During the same period, the production of pulses has, however, remained stagnant to around 11 to 12 million tonnes touching the peak level of barely 13 million tonnes in 1975-76. One of the major factors responsible for stagnation in pulse production is that area under these crops has not increased between the years 1955-56 to 1978-79 and has, as a matter of fact, remained established with minor variations around 23 million hectares while area under cereals has registered an impressive increase of 19.8 per cent from 87.3 million hectares to 104.6 million hectares.

Furthermore, in the case of pulses, during the year 1955-56 to 1978-79, there has not been any success in raising yield per hectare as it has only risen by 9.5 per cent from 475 kgs per hectare to 517 kgs per hectare, which compared to cereals such as wheat and rice is modest. In the case of cereals the increase in yield per hectare has been as high as 108.8 per cent. Moreover, in relative terms, per hectare yield of pulses which was 74.5 per cent of cereals in 1955-56 declined to about 38.8 per cent in 1978-79.

One of the factors responsible for slow growth in productivity of pulses is that while percentage of irrigated area to total area under pulses has declined from 8.9 per cent in 1955-56 to 7.7 per cent in 1978-79, in the case of cereals irrigated area has gone up from 28.0 per cent to 32.0 per cent.

Another major factor responsible for almost stagnation in per hectare yield in pulses has been the absence of any technological breakthrough. Also because of the prices of other crops which have benefitted from productivity breakthrough are maintained through price support operations, thus tilting profitability in their favour.

Declining availability, rising prices

There has been a declining trend in per capita availability of pulses since 1956, when it was 70.4 grams per day. In the following years it touched the lowest level of 36 grams per day in 1968. During the seventies the average availability per day worked out to about 45.5 grams, against a somewhat higher availability of 47.5 grams per day during the sixties.

The imbalance created by rising demand and stagnant production has resulted in higher prices depriving the masses of this essential source of protein. During the period 1971-72 to 1979-80, there has been a relatively higher increase in the price of pulses as

Pulses—Production Area and yield

Year	Production (In Million Units)		Area (In Million Hect.)		Yield (Kgs /Hect.)	
	Pulses	Cereals	Pulses	Cereals	Pulses	Cereal
1955-56	11.71	57.63	23.22	87.34	476	639
1960-61	12.73	69.59	23.56	92.02	539	753
1969-70	11.69	87.81	—	—	—	—
1970-71	11.82	96.60	22.53	101.78	524	949
1971-72	11.09	94.07	22.15	100.47	501	936
1972-73	9.91	87.12	20.92	98.36	474	886
1973-74	10.00	94.66	23.43	103.11	427	918
1974-75	10.01	89.81	22.02	99.05	455	907
1975-76	12.04	107.99	24.45	103.73	533	1041
1976-77	11.36	99.80	22.98	101.37	494	1088
1977-78	11.97	114.43	23.50	104.02	509	1308
1978-79	12.17	119.20	23.55	104.57	517	1334

*Research Officer, Planning Commission.

compared to cereal. It may be mentioned that during the period under reference there was smaller increases in wholesale price index of 91 per cent and 65 per cent in respect of two major cereals viz. rice and wheat respectively as compared to 140 per cent in pulses. A major factor responsible for smaller increase in rice and wheat was their distribution through fair price shops, which kept their prices under check in the open market.

In view of the fact that pulses constitute a major source of essential protein to the masses, it is imperative on the part of the Government to take all necessary measures to raise the production of this vital commodity. In this context it is also to be kept in mind that unlike edible oil domestic shortage of pulses cannot be supplemented through imports, since this commodity is not available in the world market.

The following resources deserve careful consideration for inclusion in the policy-mix for pulses for the Sixth Plan under preparation

(a) The Government should consider setting up of a separate directorate of pulses at the Centre in the Department of Agriculture.

Irrigated Area Under Pulses

(In Million Hectares)

Year	Pulses	Cereals
1971-72	1.97 (8.9)	28.11 (28.0)
1972-73	1.76 (8.4)	29 00 (29 5)
1973-74	1.87 (8.0)	29.30 (29.30)
1974-75	1.82 (8.3)	30.48 (30 48)
1975-76	1.95 (8.0)	32.16 (31.0)
1976-77	1.77 (7.7)	32 47 (32.0)

Note : Figures in brackets indicate percentage of irrigated area in the total.

Wholesale Price Index

(Base : 1970-71—100)

Year	All Commodities	Food-grains	Rice	Wheat	Pulses
1970-71	100.0	100	100	100	100
1971-72	108.2	108	105	103	118
1972-73	121.5	127	121	110	150
1973-74	158.0	160	162	120	199
1974-75	173.9	199	189	189	196
1975-76	162.6	146	147	153	148
1976-77	182.1	161	157	159	171
1977-78	182.8	172	149	162	244
1979-80	299 1	191	191	165	240

(b) Inadequate supply of seeds in respect of pulses has been a major constraint in enhancing production. This deficiency could be removed by a suitable seed production programme to be taken up by the National Seed Corporation, and the State Seeds Corporation. Besides production of certified seeds other programmes could include laying out demonstrations and supplying of mini-kits containing new varieties of seeds

(c) Pre-sowing treatment of seeds and application of rhizobial culture for pulses particularly in new areas, needs to be propagated.

For raising pulses production, a technological breakthrough has to be achieved in high-yielding quick maturing varieties. The pulse growers can also be induced by providing them with input subsidies in respect of fertilizer, water, pesticides/insecticides, etc. □

Self and Special Employment Schemes in Andhra Pradesh

C. S. Venkata Ratnam and B. Appa Rao*

GOVERNMENT of Andhra Pradesh launched the 'Self-Employment Programme' in 1971-72. The main objective of the Programme is to create job opportunities for the educated unemployed and artisans. The Department of Industries has been taking keen interest and assisting the entrepreneurs in starting small scale industries, servicing units and business ventures depending upon the aptitude of the entrepreneurs. So far eight schemes have been introduced under self-employment programme, namely, margin money schemes, establishment of technicians' co-operatives, establishment of commission agents, organisation of marketing societies at district level, providing employment avenues to educated artisans, co-operatives, stablishment of commission agents, employment scheme and employment of the educated unemployed as managers of industrial co-operatives.

Table 1 on the next page presents the progress of self-employment scheme in Andhra Pradesh since its inception. Due to sustained and concerted efforts of the Department of Industries this programme yielded good results Till the end of March 1979, as many as 11,375 units have been set up providing employment to 45,078 persons.

Margin Money Scheme

Margin money scheme has become more popular in mobilising entrepreneurship among the unemployed and weaker sections and contributed to the setting up of over 9,000 units with an employment potential of more than four persons per unit. Four out of every five units put on ground were under the margin money scheme. They accounted for 83 per cent of the employment generated under self-employment schemes. Nearly 20 per cent of the units were started under the scheme for providing employment avenues for educated artisans. Under this scheme, any entrepreneur with a minimum qualification of Matriculation or I. T. I. is eligible for financial assistance to set up an industrial unit, small business venture or servicing activity. The Department assists and guides the entrepreneurs in choosing the line of activity, prepares feasibility reports and renders other necessary help for starting an industry. In addition to this, the Department sanctions 10 per cent of the total cost of the scheme as margin money loan at the rate of 6.25 per cent interest.

As on 31st March, 1979, the units put on ground were 9,037 with a total investment of Rs. 23.54 crores providing employment to 37,524. Out of the total units, 44.72 per cent of the units are small business ventures, 34.29 per cent are small-scale units and the rest servicing units.

The twin cities of Hyderabad and Secunderabad accounted for a little over 20 per cent of the units Their share in total investment and employment generated under the scheme was 23 per cent and 24 per cent respectively. Only three districts-East Godavari (7.81 per cent), Krishna (7.14 per cent) and Visakhapatnam (5.74 per cent) accounted for over five per cent each of the total units. The relative ranking in terms of investment and employment generated, however, varied depending upon the predominant nature of units started there. For example, East Godavari

Till the end of March, 1979 as many as 11,375 units have been put on ground providing employment to 45,078 persons.

accounted for 11.97 per cent of employment as against 4.84 per cent of investment and 11.6 per cent of employment in Krishna district. Thus, it can be said that majority of the units in East Godavari are relatively capital intensive, while those in Krishna district being labour intensive. Further look into the categories of units reveal that nearly 50 per cent of the units set up in East Godavari under the scheme were small scale industries while over 55 per cent of the units in Krishna district were small business units (Kirana shops, etc.) requiring low investment and entailing higher employment potential. Similar differences are discernible in other districts also.

Of these units 12.61 per cent were started by technically qualified entrepreneurs. Of the total beneficiaries, 94.06 per cent are males and only 5.94 per cent females. About 10 per cent of the units were established by Scheduled Caste and Scheduled Tribe candidates. More than 50 per cent of assistance had gone to entrepreneurs with investments below Rs. 10,000. Two out of five units were started in rural areas as

*Department of Commerce and Management Studies, Andhra University, Waltair,

Table—1

Scheme-wise Progress Under Self-Employment Schemes in Andhra Pradesh as on 31st March 1979

Sl.	Name of the Scheme	Units put on ground	Employment generated
1.	Margin Money Scheme	9,037 (79.45)	37,524 (83.24)
2	Establishment of Technicians Co-operatives	97 (0.85)	3,826 (8.49
3.	Establishment of Commission Agents	6 (0.05)	14 (0.03)
4.	Organisation of Marketing Societies at District Level	9 (0.08)	199 (0.45)
5	Providing Employment Avenues to Educated Artisans	2,221 (19.53)	2,221 4.93
6	Co-operative Societies for clearance of goods	5 (0.04)	63 (0.14)
7	Subsidised Employment Scheme	..	1,219 (2.70)
8	Employment of Educated unemployed as managers of Industrial Co-operatives	..	12 (0.003)
		11,375 (100.00)	45,078) (100.007)

against one and two out of five in metropolitan cities and district head-quarters respectively. Thus, it can be said that the scheme helped, though in a small way, in the dispersal of industries and their location in rural areas.

A review of the working of these units reveals encouraging results. Out of 7,955 units, 5,055 (63.54 per cent) were successful and servicing their debts while another 1,638 units (20.59 per cent) were successful but not servicing their debt. About 15 per cent each were either limping or sticky.

Special Employment Programme

During the year 1978-79 the State Government have launched a novel scheme, namely 'Special Employment Scheme' with the assistance of various Heads of Department in the State. The main aim is to provide employment opportunities to weaker sections in particular. This programme also envisages creating job opportunities to the educated unemployed in setting up small scale industrial units, servicing units and business ventures by providing 20 per cent loan as Government share of margin money.

Under this programme, an entrepreneur is sanctioned 20 per cent margin money through the Backward Class Corporation, the Scheduled Caste Corporation, or the Scheduled Tribe Corporation and the balance of 80 per cent is financed by banks and other financial institutions. Towards margin money, the amount of Rs. 15.75 lakhs from the Industries Department of Rs. 79.79 lakhs from the Social Welfare Department (20 per cent) have been sanctioned for this programme during 1978-79. About 2,000 small scale industrial units and 3,000 business ventures were started by those belonging to scheduled caste/tribes or backward classes in one year.

Other Measures

Another significant special employment scheme, 'Society for Employment Promotion and Training in the Twin Cities' (SETWIN) was started by the Government of Andhra Pradesh in 1978 to maintain the existing centres under employment scheme in Hyderabad and Secunderabad, to expand the Employment Schemes in the Old City and to provide training and employment avenues to large number of unemployed

Recently, the Government has adopted several measures to boost industrialisation including exemption to small-scale industries from obtaining registrations and approvals of Government, i.e., liberate all the small units involving a capital investment of less than Rs. 1 lakh from the cumbersome procedure of obtaining the approvals and sanctions from Government agencies. As regards industries with an investment of more than Rs. 1 lakh, it was proposed to have a model agency for each district which would be empowered to issue a single clearance certificate within two months. The whole system of Central and State incentives for industries set up in backward areas was under revision. The Centre had set up a Special Committee to re-examine the backward areas development programme in the State. The incentive of an interest-free sales tax loan for new industries in the backward areas is being reviewed. A procedure is being evolved under which an enterprise would be advanced the money as interest-free loan to be adjusted with the sales tax instalments. The Government may also consider exempting the small units from payment of voluntary loan contribution and minimum charges to the State Electricity Board.

The success of various programmes cannot be adequately appraised by the amount spent, number of units set up, employment generated, etc. Cost-benefit analysis of each programme and impact studies will provide the much needed insight for perspective development planning. Economists and social scientists will have to engage attention to these aspects.☐

The Fuelwood Gap

K. G. Bhatia*

A prominent feature of the energy situation in India is that the non-commercial form of energy which constituted about 68 per cent of the total consumption in 1953-54 came down to about 44 per cent in 1975-76. Even though the fall in the proportion of non-commercial fuels is substantial, which is in keeping with rapid industrialisation of the economy, however, in absolute terms there has been a considerable increase in consumption over the period and as such an important factor to be reckoned. In fact, the fall in the proportions of non-commercial fuels is more due to rapid rise in the contribution from commercial sources of energy rather than a fall in demand for non-commercial energy. The estimates of total energy consumption from 1953-54 to 1975-76, in coal replacement measure, and their relative shares between commercial and non-commercial fuels, as adopted in the Energy Policy Report (1979), are given in Table 1.

A view of the top pieces stacked and ready to be sold at site.

The projections indicate, that non-commercial fuels consumption which was about 194 million tonnes coal replacement (MTCR) in 1975-76 would increase to maximum of 204 MTCR in 1982-83 and from then on it would decline slowly, mainly because of shift in favour of commercial fuels.

As mentioned earlier, in rural areas, supply of firewood contributes more than two-thirds of the share

Table—I

Total Energy Consumption and relative shares of commercial and non-commercial fules from 1953-54 to 1975-76

(In million tonnes coal replacement (MTCR))

Source	1953-54	1960-61	1965-66	1970-71	1975-76
Total Commercial Fuels	60.4 (32.4)	101.2 (41.0)	147.0 (47.9)	197.3 (53.4)	252.7 (56.5)
Total Non-Commercial fuels	125.9 (67.6)	145.5 (59.0)	159.6 (52.1)	172.2 (46.4)	194.6 (43.5)
	186.3	246.7	306.6	369.5	447.3

Note : Figures within brackets represent relative percentage share based on aggregation of coal replacement measures.

The survey data of National Sample Survey (NSS) 28th round carried out in 1973-74 indicates that the pattern of fuel consumption varies between the rural and urban households depending on household income variations. The share of non-commercial fuels in the rural areas is as high as 80 per cent as compared to 51 per cent in the urban areas. And, in the rural areas, firewood contributes a little more than two-thirds as compared to less than half in the urban households.

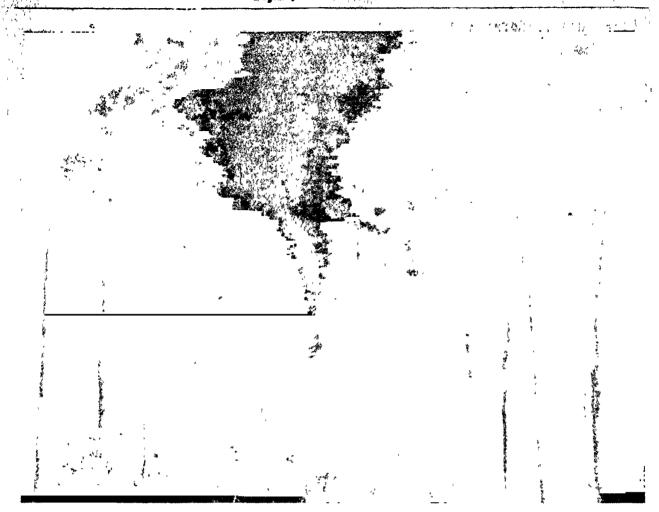
Household Energy Demand

The projections of total energy demand of the household sector and the likely relative shares between the non-commercial fuels, as given in the Energy Policy Report (1979), are given in Table 2.

*Senior Research Officer, Planning Commission.

of non-commercial fuels and therefore forests and tree-lands are the best means of increasing the availability of firewood production. The Energy Policy Report therefore clearly underlines the importance of continuation of firewood as a primary source of household energy in the villages and thus calls for a timely action of tackling this national problem at the highest level.

Fuelwood Availability

The forests in India possess two striking features : (i) spatial distribution is very much imbalanced and (ii) their growing stock and increment is very poor. The data base for fuelwood availability is very weak as three different sets of estimates are given in various studies. However, in the absence of firm figures, based on a reasonable assessment the total growing stock

Shisham (Dalbergia Sissoo) plantation in Haldwani division (U.P.)

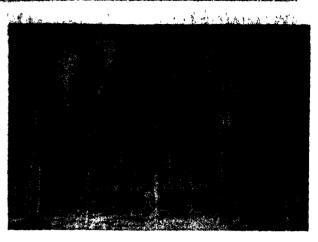
standing on 75 million hectares of the country's forest area may be placed at about 1488 million tonnes and the potential annual availability of wood—both timber and fuelwood may be estimated at around 35 million tonnes. The productivity in our forests is low due to poor stocking as compared to similar geographical zones elsewhere. It is noteworthy that leaving a few tracts in the country such as practically the whole of Assam and Meghalaya, the hilly regions of Dandakaranya, the evergreen forests of the West Coast and the higher Himalayas where the availability of fuelwood may exceed the removals, in the rest of the country fuelwood is in short supply and as such people are not getting adequate quantities of fuelwood. There is no doubt that exploitation of existing forests has to be carefully controlled so that regeneration and afforestation keeps pace with production and use of resources.

As regards un-recorded sources (outside the forests), trees occur either in camping grounds, community woodlots, along the roads, on the banks of rivers and canals, railway tracks or in the village waste-lands. There are a few trees grown on the bunds in private cultivated lands etc. According to an estimate of the 28th round of NSS, about 22 per cent of the total consumption of firewood (or about 25 million tonnes) is met from un-recorded sources. However, the Energy Policy Report has estimated the availability of firewood from unrecorded sources at about 30 million tonnes and the total annual availability of firewood—both from recorded and unrecorded sources—has been placed at about 103 million tonnes This is presumably the estimate of potential availability. This would still leave an enormous gap to be bridged between the demand and supply.

There is considerable scope for enhancing the availability of fuelwood from our forests as also in areas outside forests called treelands provided adequate steps are taken. Hope lies in fully stocking the existing forests and taking up new plantations of quick-growing short rotation fuelwood species both in the government forests and outside the forest areas but near to the centres of consumption. In this regard we may have to face some difficulties also, as suitable lands for raising plantations are readily not available in the vicinity of rural habitation Land-use competition for more valuable uses such as agriculture restricts the use of more fertile areas for growing trees Optimisation of fuelwood yields per unit area and by practising intensive management is the possible way to minimise area requirements. Keeping these difficulties in view a frontal attack to mitigate fuelwood shortage can be made by taking up rural household energy plantations in all the available vacant marginal and degraded lands in and around villages

There are about 13 million hectares of permanent pastures and other grazing lands, 16 million hectares of culturable wastes and 25 million hectares of fallow lands, making a total of 54 million hectares. We need to identify and earmark only a very small fraction out of these areas which are most suitably located with productive potential.

Fuelwood Plantations

There is no doubt that efforts were made in the past to mitigate the shortage of fuelwood as then seen and these efforts are continuing even now So far the average area planted under the farm forestry/social forestry schemes has been about 1.2 lakh hectares per year. Plantations under farm forestry and fuelwood plantations, by the end of Fifth Plan, were about 3.2 lakh hectares and under social forestry the plantations are to the extent of 2 lakh hectares. The annual additional fuelwood availability from these new plantations may be placed at about 6.5 million tonnes, which will raise the total availability from forests from 20 million tonnes in 1977-78 to about 26.5 million tonnes. However, one gets a feeling when one looks around that our efforts have so far not been much and forests and treelands continue to be over-felled to the point of disappearance.

A general view of the plantation before cutting.

Table—2

Total energy demand in households and the relative share of commercial and non-commercial fuels—1982-83 to 2000-01

Year	Energy Demand			Percentage Share	
	Total	Commercial (in MTCR)	Non-Commercial (in MTCR)	Commercial Energy	Non-Commercial Energy
1	2	3	4	5	6
1982-83	255 7	51 6	204.1	20.2	79.8
1987-88	276.1	73.3	202.8	26.5	73.5
1992-93	296.4	100.6	195.8	33.9	66.1
2000-01	329.0	165.5	163.5	50.3	49.7

In raising fuelwood plantations, the emphasis should be on producing maximum volume per unit area in the shortest time through intensive management. Technical aspects of plantations would deserve utmost consideration. Much would, for instance, depend upon the correct choice or species to be propagated under different sets of physical climatic and soil conditions. Besides well established local and indigenous fuelwood species, quick growing exotic species like Eucalyptus, Wattles and Casuarina should be taken up for boosting up volume production.

Financial

Substantial investment will no doubt be required to tackle the fuelwood problem, for example, increasing the present tempo of plantations from 1.2 lakh hectares to 2 lakh hectares annually for a period of ten years @ Rs. 1500 per hectare would need an expenditure of about Rs. 300 crores to be made. These plantations may yield on a sustained basis as much as 20 million tonnes of fuelwood annually on maturity, on an yield assumption of 100 tonnes/hectares on a ten-year rotation. Obtaining investment funds of the order of Rs. 300 crores for a long gestation project like fuelwood plantations may take us aback in determining budget priorities, specially when there are many sectors competing for allocation of resources. Perhaps serious thinking is immediately called for to induce individuals, community organisations, private organisations etc. to take up a programme of tree planting on a national scale by giving them suitable incentive, technical guidance, credit facilities etc., which would greatly supplement governmental efforts.

Because of its immense importance, international aid giving agencies have started giving more serious attention to rural sector. World Bank is inclined to give large loans assistance for forestry projects which will directly help in household energy subsector in developing countries. The Bank has recently financed in India (U.P. and Gujarat States), in Republic of Korea and in Malawi forestry projects that are primarily concerned with meeting the requirements of rural population for fuelwood through establishment of community woodlots and farm home-stead planting. The Bank, along with other international agencies, has helped the Nepalese Government in the formulation of a project that will initiate a large reforestation programme in the hill districts of Nepal. The World Bank is thus giving priority to viable schemes for reforestation of firewood species. The Bank's role, it may be mentioned,

(Contd. on page 30)

Impressive Growth of India's Exports

Dr. V. P. Batra*

INDIA'S industrial development has undergone a complete change since the planned process started in 1951. The country has now trading links with practically all the overseas countries. The items on the export list today number about 3000 as against 50 at the time of Independence.

Exports, which had been more or less stagnant during the decade 1951-60, averaging little over Rs. 600 crores per annum, started increasing between 1961 and 1966. On 31st March, 1966 exports stood at about Rs. 806 crores. There has been an impressive increase in exports since then. In 1978-79 exports totalled Rs. 5726 crores.

Among the important items, exports of cotton manufacturers went up from Rs. 48.2 crores in 1961-62 to Rs. 586 crores in 1977-78, iron ore and concentrates from Rs. 17.4 crores to Rs. 220 crores, unmanufactured tobacco from Rs. 14.0 crores to Rs. 110.6 crores and iron and steel from Rs. 10.0 crores to Rs. 265 crores. Exports of jute manufactures which were at the level of Rs. 225.5 crores in 1973-74 increased to 294.0 crores in 1974-75 and then declined to Rs. 245.9 crores in 1975-76 and further to Rs. 201 crores in 1976-77. However, export of jute goods picked up once again in 1977-78 and amounted to Rs. 221 crores. Exports of tea which reached an all time high of Rs. 180 crores in 1979-68 witnessed a declining trend up to 1973-74 but it picked up in 1974-75 and reached the record level of Rs. 515 crores in 1977-78. Among the other important items which showed marked improvement in 1977-78 over 1976-77 are engineering goods (Rs. 88 crores) and handicrafts (Rs. 155 crores). The principal items of country's exports are tea, coffee, tobacco unmanufactured, jute manufactured, oil cakes, cashew kernels, sugar, vegetable oils, (non-essential), leather and leather manufactured, cotton piece goods, cotton apparel, silver, fish and fish preparations, iron & steel, and engineering goods.

The main items which registered decline in 1977-78 were sugar (Rs. 131 crores), feeding stuff for animals (Rs. 118 crores) and leather (Rs. 32 crores).

Recent Trends

India's exports in 1978-79 rose by only 5.9 per cent to Rs. 5,726 crores showing a sluggish growth for the second year in succession. This performance is in sharp contrast to the impressive annual average growth rate of 27 per cent in the years 1973-74 to 1976-77. It indicates a return to the long term trend of a declining share in world exports. India's share declined from 0.7 per cent in 1970 to 0.5 per cent in 1974 and then increased in the next three years to 0.6 per cent reflecting the sharply improved export performance from 1974-75 to 1976-77. There was a reversal of this thereafter with exports growing slower than world exports.

An important development in 1978-79 was that some of the main growth items of exports having high value added such as cotton apparel, leather and leather manufactures, fish and fish preparations showed sizeable increases in their respective earnings. Gems and jewellery exports included under the category handicrafts also performed well. Exports of these items taken together increased by 41 per cent in value terms and helped offset the decline in export earnings of items like tea, coffee, jute manufactures, oil cakes and cashew kernels.

It is heartening that exports of gems and semi-precious stones unworked and worked improved from Rs. 156.5 crores in 1975-76 to Rs. 287 crores during 1976-77 and further to Rs. 438 crores during 1977-78. This increase was due to favourable market conditions abroad, particularly in the United States. An appreciable increase was also recorded in the exports of handmade carpets and druggets. Moderate increases were recorded in the exports of metal artware, handprinted textile, shawls, scarves, etc.

India has trade links with practically all the countries. The number of export items which were only about 50 at the time of independence are now about 3000. Even the exchange earnings from exports have also increased from a mere Rs. 600 crores to about Rs. 6000 crores (provisional).

In 1979-80 provisional custom data place exports at Rs. 5999 crores showing an increase of 8.2 per cent over the provisional exports figure of Rs. 5544 crores in the previous year. Compared with the revised estimates of exports of Rs. 5726 crores for 1978-79, the provisional 1979-80 figure shows an increase of only 4.8 per cent. Exports during 1979-80 were adversely affected by a number of domestic supply constraints and bottlenecks in transport and ports Industrial production remained also virtually stagnant.

Reasons

The reasons for slow growth of country's exports are varied. The most important among them are domestic supply constraints, the strong pull of the highly profitable domestic market which does not encourage aggressive export orientation and also an increasingly unfavourable international trading environment compared with the past because of slower growth in world trade and an accompanying increase in protectionism. The growth of protectionism in advanced countries directed at manufactured exports from developing countries is a particularly disturbing phenomenon. There is increasing resort to a host of measures like quotas, excessively restrictive cumbersome quality control, counter-

* Freelance Writer

vailing duties etc. all of which limit access to developed country markets and increase the uncertainty facing exports.

It has also been observed that quotas are working as constraints upon our export effort particularly in the case of garments and leather goods. For example in 1978, the quota for exports of blouses and trousers to the US was fully utilised. In the same year, in the case of millmade goods and other garments, utilisation of US exports quota was 108.6 per cent. The level was exceeded as advantage was taken of the flexibility provision. Similarly in the case of exports of knitted garments to Norway and Finland quotas were exceeded in several cases. In the absence of such restrictions, our exports would have certainly performed better. There are also cases where our export levels fall short of the available quota but these are in the categories where we do not have adequate production capacity for the type of output demanded. Besides, the mere existence of quotas and the increasingly restrictive international environment tend to discourage longer term investment for export planning in these sectors.

Role of Trade Development Authority

Trade Development Authority (TDA) established in 1970 provides micro level, personalised services to its clients. It is a catalyst of export promotion. As an instrument of growth for the products of small and medium scale industries in the sphere of non-traditional exports, TDA has considerably enlarged its area of operation. The list of product groups taken up for export promotion has also been enlarged by adding tele-communication equipment, mechanical handling equipment, basketry, garden tools, garden furniture, carpeting, heating and cooling equipment, scooters and mopeds. During the last 30 months (Jan. 1978-June 1980) over 50 buyers' missions from abroad visited India at TDA's invitations. Many of these buyers visited India for the first time and placed orders for Indian goods. Orders for new products like mopeds and scooters, water pumps, oil pumps, dog chains, axle shafts, night latches, aluminium paste, rain coats, materialised for the first time with TDA's help.

In recent years the exports of a large number of newly established industries have shown rapid rates of growth, even though the absolute quantities involved are as yet quite small. Completely new lines of exports have emerged and there is some evidence that the range of commodities entering export trade is gradually increasing. The Government's export policy has been tailored to promote exports and also protecting domestic consumer interests. A broad range of export promotion and support measures continued to be in force—such as the scheme for the supply of indigenous and imported inputs at international prices for export production and cash compensatory assistance to selected exports. Of great importance is the simplification of the government's export promotion procedures.

Expansion of exports is in fact the kingpin of any policy of solving the problem of deficits. It involves three main steps. One, there is the need at least to maintain traditional exports in absolute terms, if not as a proportion of growing export of growing gross national product of the country. Two, it requires promotion of the export of non-traditional items on a large scale with emphasis on selected items like engineering goods and iron and steel. Three, domestic consumption of certain items which have great export potential must be kept within check so as to make available surpluses for export. □

Marine Engineer Turns Progressive Farmer

SHRI M. D. Bhardwaj, is a retrenched engineer of Merchant Navy. When he was retrenched, he did not lose heart. He returned to his native village Sanawar near Kasauli Hills and joined his farming family, having a small holding. Due to meagre resources and small agricultural holding it was too difficult to make both ends meet for a large family. He ventured a small project of mushroom farming in 1977. But the project was quite uneconomical due to lack of marketing facility, technical know-how, raw materials like special compost, wooden trays, transportation etc.

So he underwent a course for progressive farmers at Mushroom Research Centre. The S.F.D.A., Solan extended help to construct sheds, required for the mushroom cultivation.

After 2-3 years of hardwork Shri Bhardwaj is earning profits to the tune of Rs. 1000 per month. He is also encouraging other mushroom growers to instal a canning unit so that their products could be supplied to other parts of the country as well.

G.C. Lakhotra
F.P.O., Chandigarh.

The Place of Khadi & Village Industries

(Contd. from page 14)

of concentrating on development of certain industries in a particular State depending on vast potentialities in that State for obtaining maximum results per unit of investment and capital, (f) creation of infrastructural facilities in the form of technical guidance for transfer and supervision of improved technology introduced in the field, (g) organisation of wider market outlets for obtaining fair returns to the artisans, (h) expansion of activities in areas not covered so far, are some of the strategy approaches for implementation of its programmes during the sixth Plan period. Through these efforts, the Commission envisages to nearly double the employment opportunities that are being now provided, in the Sixth Plan period.

Pandit Jawaharlal Nehru had occasion to point out that Gandhiji made the Charkha "an economic and revolutionary symbol for the people". The revolutionary aspect of the Khadi Industry outweighed the economic aspects then. Today we have to develop it primarily because of its economic justification. This is available in abundant measure and we have to promote Khadi and Village Industries as a means for the solution of the economic and social evils in the countryside.

SFDA in Pauri Garhwal

Prem Lal Joshi*

THE Small Farmers' Development Agency of Garhwal Division, established in Kotdwara (Duggada block) of Pauri-Garhwal in 1975, is due for termination by 1981. Later on the project was extended to other hilly blocks namely; Dhangu, Ekeshwar, Lansdowne, Beironkhal, Rikhnikhal, Pokhra and Nainidanda.

Since the inception of the project, a total amount of Rs. 56.09 lakhs was released by the Central Government as grant-in-aid to the agency upto March, 1979. The amount utilised by the agency stood at Rs. 47.48 lakhs, that is 86.6 per cent of the total grants released. There had been about two-fold increase in the total number of beneficiaries under the programmes (from 3773 to 7112 by March, 1979). More than 75 per cent of the beneficiaries were covered under improved agriculture practices including land development. One of the disquitening features was that the representation of beneficiaries from the scheduled castes and scheduled tribes declined from 10.2 per cent in 1975-76 to 7.9 per cent in 1978-79. Cooperative societies were catering to the short and medium term credit needs of the farmers while commercial banks were meeting medium term credit needs. Both the financial institutions could not provide long term loans till March, 1979 to the beneficiaries of the different programmes

A Critical Appraisal

No detailed study was conducted to identify the important social and economic problems of the target groups before launching the SFDA programmes The entire emphasis was given to production side of agricultural development but consumption and social-cultural requirements of the farmers were not at all taken into consideration while formulating the programmes. The beneficiaries were still forced to depend heavily on money lenders for short term credit needs as the commercial banks were not meeting such credit requirements of the farmers. The beneficiaries were identified on the basis of the existing land records which were incomplete. These records could not be considered reliable and dependable because these were manipulated by the lowest revenue officials to favour non-target groups to avail the subsidy and other incentives. Field staff of the agricultural department also failed to evince the necessary interest and co-operation in the improvement of land belonging to scheduled caste and scheduled tribe farmers. Inspite of its five years of existence, the identified beneficiaries from the communities of weaker sections were out of its ambit.

Extension and credit agencies were finding it difficult to serve the landless and sub-marginal farmers These institutions say that the response from them was poor and they were slow in adopting the new technology. The aims and objectives of lending policies of the financial agencies are laudable but in practice such policies do not favour large-scale financing to small and marginal farmers in view of the risk and uncertainties on their part. The commercial banks were adopting the policy of 'pick and choose' while granting the loans to such farmers The loans must be sanctioned even for meeting the consumption and social-cultural demands of the beneficiaries because the scheme is also meant for their overall uplift. Such a change in the lending policies is not only desirable but also inevitable on the part of the financial institutions. Both types of loans that is, productive and consumption will have to be subsidised by the SFDA. An appropriate mechanism should be evolved to check that all these loans could be profitabily utilised for the purposes for which they were sanctioned. Then only, the role of money lenders could be eliminated. It is also suggested that a Diary Development Corporation should be established with one chilling plant in Duggada block and arrangements should be made to collect the surplus milk from the entire district so that dairy development schemes are taken by the farmers on commercial lines. □

Head of Commerce Dept,
Garhwal University, Srinagar (UP)

The Fuelwood Gap

(Contd. from page 27)

is important but not central, bearing in mind that it likes to be regarded as a lender of last resort in cases where funds for large capital investments may not be available on quite attractive terms from more normal sources. The country itself has to solve the problems. One of the major issues to be decided by the government will be as to how much of national budget and how much of national debt can be taken by the energy sub-sector. In doing so let us not forget that it will be lack of planning if we fail to plan for ensuring self-sufficiency in fuelwood along with foodgrains in the country. □

BOOKS

Parliamentary Privileges

Myth and Law of Parliamentary Privileges : By Hardwari Lal; Allied Publishers Ltd., New Delhi 1979; Pp 274, Price Rs. 45.

MANY are the myths regarding parliamentary privileges in India. Since India has a written constitution, Parliament's sovereignty to some extent is circumscribed. So also the privileges of MPs, although they are generally supposed to be the same as obtaining in the House of Commons. Parliamentary privileges, as the author rightly points out, have grown from ancient origins, conventions and traditions. But nobody has yet made a comprehensive treatise on the subject so far.

The author's attempt to trace them historically and applying them to Indian conditions is indeed commendable, though he himself has left many disputable points unsettled. The book deals in some detail the author's own expulsion from the Haryana Legislative Assembly to which he had been duly elected.

He contested his expulsion from the State Assembly in the Supreme Court. The court upheld the author's contention and ruled that no legislature or Parliament had the right to expel any duly elected member This ruling, the author says, should set at rest all claims of sovereignty of legislatures and Parliament vis-a-vis that of the House of Commons. Perhaps he may be right, and perhaps, the last word on it has yet to be pronounced.

However if any elected member to any legislature or Parliament willingly or otherwise causes injury to the dignity and honour of the house, who is to give the proper punishment? The courts of India may not be the final arbiter since the constitution makers had ruled out the role of the courts as a third chamber. As such the house itself has to reprimand the erring member. Normally this postion has been accepted But when a house goes to the extent of expelling a duly elected member from the services to the house, the position changes. Since the house does not possess those soverign powers as the House of Lords in Britain, the matter is still left open.

The book is fully documented and would serve as an eye-opener for any student of parliamentary affairs in judging and evaluating correctly the oft-maintained myths of parliamentary privileges. Much more intensive research has to be done on the subject before drawing any final conclusion. Even so a bold attempt has been made by the author in this field which has to be congratulated.

E. P. Radhakrishnan

Gandhi and the Punjab

From Civil Disobedience to Quit India, by S. L. Malthotra, Publication Bureau, Panjab University. Chandigarh Pp. 188, price Rs. 40.

THE book under review is the third volume in a series on Gandhi and the Punjab. The province of the Punjab in this context means the present-day Punjab in India, the West Punjab in Pakistan, Haryana, and (the author forgets to mention) some parts of the present-day Himachal Pradesh. All these constituted the erstwhile Punjab during the period of 1932 to 1942, which the book covers. While in the rest of India the Gandhian movements had to make their mark in the context of the communal problem which embraced two communities i.e. Hindus and Muslims, the settlement of the communal problem in the erstwhile Punjab concerned three communities, namely Hindus, Muslims and Sikhs. Also it was the only province which in the years following the Montagu-Chelmsford Reforms had a non-Congress Government, which enjoyed the support of Muslim electorate and also of the rural and urban elite.

The author maintains that the Congress failed to develop a farsighted policy to deal with the communal forces in the province. This failure is reflected in the provincial and national leaders' inability to prevent an alliance between the Unionist Party and the all India Muslim League. He forgets that the all India Muslim League had little hold in Punjab till, say, the death of Chhotu Ram. One factor that impeded the 'progress' of a Gandhian movement in the province was that, while Gandhiji's ideals and programmes had appeal for the rural masses, Congress in the Punjab was mostly confined to urban Hindus who could hardly appreciate their purport and importance. So in fact was the programme of the Unionist Party. However, there is no denying the fact that the work of the Congress in the Punjab was limited to towns' people. It is interesting to be told that the civil disobedience movement had created a stir in the eastern part of the province. Thus while only 100 people had been arrested in 1920-21 in the areas constituting Haryana today, more that 1000 were arrested in Rohtak district alone during 1930—32 movement. Says the author · "Subsequent Congress campaigns and programme equally affirm that the centre of Congress activity was moving remained the hub of all political activities." He rightly points out that after the death of Lala Lajpat Rai in 1928 and the withdrawl of Sardul Singh Caveeshar from the Congress Working Committee over the office acceptance issue, there was hardly anyone else left in the higher echelon of the Congress to represent the Punjab case and to shape Congress policies in the light of conditions in this province. Muslims kept themselves aloof from all the Movements launched by Gandhi during the period, and his influence on the Sikhs as a community declined afte Caveeshar joined Subhas Chandra Bose's camp and Kharak Singh withdrew his support due to his dissatisfaction over the Nehru Report With the outbreak of World War, the Akalis drifted away and Master Tara Singh supported recruitment of the Sikh to the army. The concluding sentence of the book would give an idea of the style the erudition presentation by the author. "It was unfortunate that Gandhi did not play an active role in the affairs of this province during this period (from civil disobedience to Quit India), for it was through his control over the political forces of the land of the five rivers that he could keep a check over the ambitions of the all India Muslim League leadership, and thereby could restrain the forces that were developing to envelop the country in the holocaust of the partition."

Madan Gopal

The Immortal Composers

Composers (Cultural Leaders of India Series) edited by V. Raghavan, published by Publications Division, New Delhi; Pages 109, Rs. 5.25

THOUGH a slender volume *composers* contains as many as eleven articles on the celebrities of classical vocal and instrumental music. The venerated mystics belonging both to music and poetry seem to emerge for the first time with personality distinctiveness from the mist and maze enveloping their lives, Indian classical music floats and wafts melodies based on 60 odd *ragas,* each with its own ethical and emotional properties, and definite rules for improvisations. A full history of our music and the evolution of the musical-forms is yet to be written.

The matrix of our classical music has been religious experience. Jayadeva, a court poet of Maharaja Laksmansena of Bengal, burst into singing his songs devoted to the doctrine of Radha-Krishna and their love sports. His *Gitagovinda* which contains religious-mystical songs set to twelve classical *ragas* and five *talas* exerted a deep influence on the development of Vaisnava poetry in Mithila and Bengal. Its musico-literary mellifluence and aesthetic qualities are a living tradition. Tyagaraja, Muthuswamy Dikshitar and Syama Sastri belong to what may be described as the Trinity of South Indian Music. Tyagaraja composed songs for use in Bhajanas and Kirtanas. His contribution to Karnataka music especially included new ragas like Kharaharapriya and Hari-Kanbhoja. Dikshitar's musical compositions, Kritis and Svarajatis, merit him warm encomiums. He floated in the regions of rhythm and *tala prastara. Primarily a Vina player he was in*formed by Jnan and devotion to the deity transcending Name and Form—'Saguna-Nirguna-Swarupam'. Dikshitar was proficient in both vocal and Vina music. He was a Vedantist per excellence. Syama Sastri has given splendid compositions in a number of ragas mirroring the varied and colourful aspects of each, especially Anandabhairavi. He stands without a parallel in the art of composing Swara-sahityas. Kshetrayya, the most outstanding composer of Padams in the Telugu language, had intimate knowledge of Natyasastra. His *padams* are exquisite love-lyrics replete with the all-absorbing passion of the gopis for Krishna ; however, the erotic and the esoteric seem to coalesce. Tallapaka Annamacharya gave us songs which have sensual inebriation and at the same time spiritual sublimation Tradition regards him as Narada-reborn. His songs in Telugu are doubtless a classe by themselves Maharaja Svati Tirunal, a prince, renounced the world to serve the Muse in both her forms, poetry and music. His compositions provide a synthesis of all the forms of Karnataka and Hindustani Music. Gopal Krishna Bharati was a celebrated Tamil composer, singing of Lord Nataraja in the colloquial Tamil. His recitals abound in songs and dance-postures. Amir Khusrau was a poet who composed both in Persian and Hindi. His Hindi songs and other poetic-forms are a watershed in the evolution of the Hindi language. He was a sufi devoted to his pir Nizamuddin Aulwaliya. Khusran died at the ripe age of 95 years hearing the news of his pir's passing away. He fell upon his tomb bursting into a Hindi song : Gori sowe sej par mukh par dare des—Chal Khusrau ghar apne ran bhayi sab des. This song has attained immortality because of its being t opening songs of the Urs of Nizammuddin Aulwali In his songs Persian melodies and Indian ragas blended. He is regarded as the emblem of national i tegration. Tansen was a court-musician of Akb known for his poise and dignity in Dhrupada. Dhr pada is a recognised variety of classical Hindusta music. The Gwalior garana carries on the traditic Haridas was a saint-musician during the region Akbar, keeping away from courts and patrons. H authority in Dhrupada singing was acknowledged ev by Tansen. He belonged to the tradition of adhury Bhakti and expounded Bhedabheda, the doctorine different-cum-identity.

The book would certainly be drawn upon by avera readers who may get interested to go in for detail books on the Immortals touched upon in it.

Tara Charan Rasto

Unconventional Approach to Biographies

Alternative Sciences by Ashis Nandy, Allied Publishe New Delhi; Pp. 156, Rs. 40.

BIOGRAPHIES of scientists are nothing uncommo and much has been written about Jagadish Chand Bose and Srinivasa Ramanujan in the past What new with the volume under review is its rather unco ventional approach to the life-histories of the two gre Indian scientists. The author, a well-known psychol gist, looks at them from a purely sociological a psychological angles and attempts to corelate the success and failures with their life-styles and fami envirionments. The result is a fascinating, comparati study of the lives of two great men who were pol apart in their approach to science as a medium human self-expression (hence the title *Alternati Sciences*).

Bose (1858—1937) was born in a well-to- Brahmo family and had an upper class upbringing H started his career as a brilliant physicist but later chan ed his discipline to become an even more influent plant physiologist Bose gave a special Indian perspecti to world science and was one of the first among mode scientists to enter interdisciplinary research in his fiel Yet, the author tells us, he died "a lapsed scientist a half forgotten mystic". One of the main reasons f this, he says, was the scientist's "failure as a man wh could not accept that he had ceased to be a creati scientist" But nothing sealed Bose's scientific fate mo fully, the author claims, than his inability to kee open his channels of communication with his pr fessional colleagues. He never allowed anyone to co tradict him ; he could not enjoy the company of juni research workers, or of anybody whom he consider "lower in social status". In all, despite his brillia achievements he gave the impression of "a harried ma trying desperately to contain his feelings of inadequa by affirming his power and uniqueness, and by posi as a larger-than-life figure".

Compared to Bose, Ramanujan (1887—1920) was a more traditional man from a more traditional background. He came from a poor, orthodox, Brahmin family. The family lived in a town and most of its members, including the mathematician's mother, were educated. But in spite of these modern exposures they remained deeply conservatve in style. So much so, when Ramanujan was offered the followship from Cambridge, he first refused to leave India because that would go against his conservative beliefs !

The most remarkable aspect of Ramanujan's encounter with the West was the relationship he established with the British mathematician G. H. Hardy. His finest papers were written jointly with Hardy at Cambridge.

The author contends that because of his unexposure to modern life-style, Ramanujan was spared the internal conflicts of Bose so that he could live and die as a functioning mathematician. Yet, the mathematician did once face a deep personal crisis and in 1917 (a few months before he was made an FRS and three years before he died of tuberculosis), while in England, he attempted suicide by jumping on the tracks of the London Underground. He escaped death narrowly, but was badly injured, and arrested

There are innumerable, interes ing anecdotes and details from the personal lives of the two scientists, culled by the author from published material, personal correspondence and interviews While all readers may not agree with author's premises and conclusions, the books will surely provide them a new insight into the lives of the two great men.

Biman Basu

Salesmanship

The A-Z of Industrial Salesmanship, by John Fenton Allied Publishers Pvt. Ltd , New Delhi pp. 146; price Rs. 20.

THIS edition is a reprint in India by arrangement with the original publishers, William Heinemann Ltd London. The book is designed for salesmen, sales engineers and sales managers engaged in selling direct to the industries. It is written in a straight and interesting way and helps as a guide to the salesmen towards their phased approach to sales step by step. The index type contents from A to Z deal with various problems the salesmen are often confronted with.

To add to the interesting flow are, simple narrations, catchy illustrations and tables etc. The book is good for students doing salemanship course.

Vijay K. Verma

A Study on Nomads

The Nomads of the Himalayas : Dr. S. S. Shashi : Sundeep Prakashan, New Delhi : 1979 ; pp. 213, Rs. 125.

STUDY of life and problems of nomads of the Himalayas is arousing more and more interest these days. Present study which opens with "Himalayas : The Beautiful Land of Gods" provides useful background material about grandeur, beauty, physical features, inhabitants and lores of the Himalayas. The author then takes the readers to the 'Study of Sociology of Nomads'—a comparatively less explored area in sociological studies. For him the word 'nomad' does not exclusively mean pastoral nomads only, but includes all those persons, who constantly wander hither and thither and do not lead a settled life.

In his study Dr. Shashi has devoted sufficient space to pastoral nomads, Gujjars, who have not been touched by modernity and with whom child marriage is still common. Bhotiyas, the trader nomads, have drawn author's equal attention. These have caste hierarchy and among them divorce is socially condemned Marriage among Mann Bhotiyas is settled according to compatibility among the lineages of brides and bridegrooms. Rang Bangs (Night Clubs) are also found among the Bhotiyas.

Another nomadic tribe 'Gaddi' has been dealt with in Chapter V of the Volume. As a race Gaddis are simple, fierce and virtuous. The women folk are pleasing, modest and chaste. Animal sacrifice is a very common characteristic of their religious life. They are monogamous, but have elaborate marriage ceremonies. The author has devoted one short chapter to the 'Nomads of the World', touching global beggary problems

Five appendices and photographs have significantly added to the value of this otherwise somewhat costly volume.

The study is, of course, well blended and informative but its value would have gone much higher had the author devoted more attention to the concept of 'Sociology of Nomads'. The nomads of the world would have been obliged to him had he spared some additional space and still more researched their problems in his study.

Hans Raj

Personal Management

Personnel Management : By P. C. Tripathy ; M/s. Sultan Chand and Sons ; Daryaganj, New Delhi; pp. 234 ; Rs. 17.50 (Student edition)

PERSONNEL Management is a new profession which is still in its developmental sage. There have been a limited number of books telling us about the theoretical background of this developing profession and its practices in the Indian context. The book under review is an asset to the academic circles for its comprehensive contents of knowledge on the subject. It is not only a text book for the student or a handy guide for the teacher but is also of great value to the management practitioners, administrators and executives of both public and private sectors.

The overall arrangement of this technical study as depicted in this volume is as much commendable as its textual lucidity which has the peculiarity of a clear aloofness from descriptive monotony. This wholesome credit veritably goes to the author whose work is a success in several other respects also.

Rashmi Khorana

Finances of Bangalore Municipal Croproation

Finances of Bangalore Municipal Corporation by S. Rama Rao, Allied Publishers Private Limited, Bombay, 1979, pp. 119. Rs. 25.00.

BASIC problems of finance by and large are the same for all civic bodies in India including the Bangalore Municipal Corporation. The book under review is an attempt for a comprehensive analysis of financial resources.

The author has collected and marshalled a great deal of data pertaining to various sources of revenue and expanditure under different heads. The data have been put in tabular forms accompanied with analysis of trends. The analysis includes interesting points which bring out lacunae in the present system of municipal tax administration in the country in general and Bangalore Municipality in particular.

The book contains useful statistics on revenue and expenditure of Municipal Corporation of Bangalore but they are up-to-date as far as 1970-71. A book published in 1979 containing statistics upto 1970-71 does not add to credibility of analysis. The analysis of the author is useful but one cannot fail to get at times the impression of reading an annual resume of activities of the municipal corporation under study. The fact remains that the data collected and analysis rendered are valuable addition to already available material on municipal administration in India.

A. K. Guha

Islands of Sun and Smile

Laksha Dweep—A Hundred Thousand Islands by T. K. Mukandan, Academic Press, Gurgaon, 1979, pp. 225 Rs. 70

LIVING off the southern tip of the Indian sub-continent and almost lost in the blue waters of the Arabian Sea are 10 small islands, until recently known as the Laccadive, Minicoy and Amindivi, now christened as Laksha Dweep (one lakh islands). These islands of Sun and Smile would have been lost to India but for the far-sighted wisdom and prompt action taken by Sardar Vallabhbhai Patel. This fact has been revealed by the author, according to whom immediately after the transfer of power and partition of India, Sardar Patel, then the Home Minister, ordered that a ship be sent to these islands and the Indian flag hoisted there. These group of islands have a hundred per cent Muslim population. Hardly had a few hours passed when a Pakistani ship came up. Seeing the Indian Tricolour on these islands it quietly sailed away.

Not much is known about this Union territory and the author has done yoeman service in bringing out this welcome hand book in English. According to Justice V. R. Krishna Iyer of the Supreme Court of India, who has written a fine Foreward to the book, even in Malayalam books on these islands are few.

Having lived among the people Mukandan has been able to provide an intimate account of the people, their customs and traditions steeped in legend, their contact with the mainland and with the Arabs and Europeans. Marco Polo had touched these islands on the way to India in the 13th century and named Minicoy the Female Island. One normally hears of men collecting together and beating the jungles for tigers and other wild animals but not for rats as they do in the Laksha Dweep. There is another exception Even though the inhabitants are in no way 'tribal' in the sense in which it is used on the mainland, these islands are a scheduled tribal area.

Gautam Sharma

A Study in Urban Georgaphy

Land use in Big Cities ; A study of Delhi by Dr. C S. Yadav Inter-India publications ; Delhi-35, 1979 ; pages xix plus 272 ; Rs. 85.17p.

THE treatment of the complex subject matter of this book from the standpoint of a subdiscipline of Geography raises many pertinent issues. Drawing upon a good deal of data based on Delhi Municipal Corporation and other sources, the author has successfully probed into the underlying processes of residential expansion with its background of typology of residential areas and he has proceeded to apply Western models of city-structure to Delhi's residential sturcutre

The contents of the book presented under competent supervision of the Delhi School of Economics, do not altogether shut out the perspective of other disciplines, chiefly economics and sociology but give limited emphasis to the topic of urban land economics of Delhi as such. Moreover, the author is principally concerned with the intensity of residential land use in the city rather than with its peripheral socio-economic developments in recent years.

It may be stated that overall the book does give a clear picture of the conflicts of functionalism, both past and present, underlying the Growth and expansion of Delhi and some of its emerging dysfunctional characteristics in the areas covered.

It may also be observed that there is a surprising lack of coverage of the findings of governmental studies and reports, such as that of the N.B.O. that do not figure in the study except the few given in the bibliography and to this extent the specialist in the field in equal measure as the well informed layman would experience an unrequited feeling on reading through the book. This, then is the gap between an academic thesis and the art of its later revised presentation in book form for the use of the public Nevertheless, the book has on the whole undeniable topical value and export potentialities towards developed countries that are grappling with far more complex urban land-use problems through public policy measures and institutions than we can reasonably claim to be doing in India.

B. N. Nair

(*Contd. from cover II*)

Gandhiji's words........

If a minority in India, minority on the score of its religious profession, is made to feel small on that account, I can only say that this is not the India of my dreams. In the India for whose fashioning I have worked all my life, every man enjoys equality of stauts whatever his religion is. The State is bound to be wholly secular. I go so far as to say that no denominational educational institution in it should enjoy State patronage. For God-fearing men all religions are good and equal, only the followers of different religions quarrel against one another and thereby deny their respective religions I hope those in the Union of India would be worthy of their faiths and would be proud to call themselves sons and daughters of the same soil, claiming perfect equality in the eyes of the law. Religion is no test of nationality but a personal matter between man and his God In the sense of nationality they are Indians first and Indians last, no matter what religon they profess.

* * * *

Unity among the different races and the different communities belonging to different religions of India is indispensable to the birth of national life

* * * *

We are all leaves of a majestic tree whose, trunk cannot be shaken off its roots, which are deep down in the bowels of earth.

* *

There is no religion higher than Truth and Righteousness.

* * *

If a man reaches the heart of his own religion, he has reached the heart of others, too.

* * * *

I reject my religious doctrine that does not appeal to reason and is in conflict with morality I tolerate unreasonable religious sentiment when it is not immoral

* * * *

Mine is not a religion of the prison-houses It has room for the least among God's creation

* * *

I want lasting peace that springs from toleration of each other's religion

* * *

The essence of true religious teaching is that one should serve and befriend all.

* *

Religons are different roads coverging to the same point

* * *

Religion to be true must satisfy what may be termed humanitarian economics, that is, where the income and the expenditure balance each other.

* * *

A religious act cannot be performed with the aid of the bayonet or the bomb.

* * *

Unity among the different races and the different communities belonging to different religions of India is indispensable to the birth of national life.

* * *

Religions are not for separating men from one another they are meant to bind them.

* * *

All religions are branches of the same mighty tree, but I must not change over from one branch to another for the sake of expediency.

* * *

No religion taught man to kill fellow-man because he held different opinions or was of another religion.

* * *

That religion and that nation will be blotted out of the face of earth which pins its faith to injustice, untruth or violence

* * *

To benefit by other's killing and delude oneself into the belief that one is being very religious and non-violent is sheer self-deception.

* * *

Tolerance

Tolerance gives us spiritual insight, which is as far from fanaticism as the north pole is from the south

* * *

Tolerance implies a gratuitous assumption of the inferiority of other faiths to one's own

* * *

Tolerance obviously does not disturb the distinction between right and wrong, or good and evil.

* * *

Toleration is the only thing that will enable persons belonging to different religions to live as good neighbours and friends

* * *

Decency and toleration, to be of any value, must be capable of standing the severest strain.

* * *

Unless we are able to evolve a spirit of mutual toleration for diametrically opposite views, non-cooperation is an impossibility

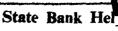
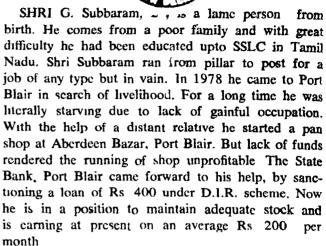
* * *

The first step in non-violence is that we cultivate in our daily life, as between outselves, truthfulness, humility tolerance, and loving kindness.

* * *

The need of the moment is not one religion but mutual respect and tolerance of the devotees of the different religions

On Casteism

As for caste, I have frequently said that I do not believe in caste in the modern sense It is an excrescence and a handicap on progress. Nor do I believe in inequalities between human beings. We are all absolutely equal. But equality is of souls and not bodies. Hence, it is a mental state. We need to think of and to assert equality because we see great inequalities in the physical world We have to realise equality in the midst of this apparent external inequality. Assumption of superiority by any person over any other is a sin against God and man. Thus, caste, in so far as it connotes distinction in status, is an evil

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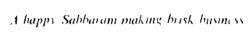
A Scene of the Sanchayika window of the Guru Nanak Mission Girls' Higher Secondary School, Prem Nagar, (M.P.)

Learning to Save

GURU Nanak Mission Girls School, Jabalpur has the distinction of being the first, in the Jabalpur Division, to have hundred per cent deposits in the Sanchayika with the largest number of students on its rolls. Its present strenth is 1930 students from Nursery to Higher Secondary classes All the students are members of the Sanchayika, a rare phenomenon All the staff members are also on the pay roll savings scheme. Due to its record performance, the School has been declared BACHAT SCHOOL of the Jabalpur Division

To boost the savings, a competition was organised in which eighteen local schools participated The Guru Nanak Mission Girls Higher Secondary School lifted three prestigeous trophies in small savings A sum of Rs. 3000 was awarded to this institution by the then State Finance Minister in token of its valuable achievements in the field of small savings This further boosted the morale of the school children to deposit more and more in the Sanchayika Scheme

Today the school is a guiding force to the other educational institutions of the city

Ravindra Nath
F.P.O.
Jabalpur (M.P.)

State Bank Hel[ps] [t]he H[andic]apped

SHRI G. Subbaram, [illegible] a lame person from birth. He comes from a poor family and with great difficulty he had been educated upto SSLC in Tamil Nadu. Shri Subbaram ran from pillar to post for a job of any type but in vain. In 1978 he came to Port Blair in search of livelihood. For a long time he was literally starving due to lack of gainful occupation. With the help of a distant relative he started a pan shop at Aberdeen Bazar, Port Blair. But lack of funds rendered the running of shop unprofitable The State Bank, Port Blair came forward to his help, by sanctioning a loan of Rs 400 under D.I.R. scheme. Now he is in a position to maintain adequate stock and is earning at present on an average Rs 200 per month

After having satisfactory financial stability and repaying the loan, he is now thinking of expanding the business by borrowing more money.

D Som
EPO
Port Blair

A happy Subbaram making brisk business

Hatcheries for Salmons

THE amazing feature of the biology of salmons of the Pacific Ocean is well-known After two to four years of life in the sea they gather into large shoals and go to spawn to the head water of the mountain rivers where they were born The female, having deposited its eggs, dies The male guards the eggs for a week or two and then also dies because the salmons cease to feed in fresh water In the spring they fry drift with the flood into the sea in order to return later.

This balance was upset by the economic activity of man The uncontrolled fishing of salmons in the ocean led to a dramatic reduction in their population In order to counter-act this trend, a Soviet-Japanese convention was signed in 1956 The convention has imposed restrictions on salmons fishery Accordingly, Soviet fishermen are now fishing salmon not in the open ocean but in the coastal waters. Further, hatcheries have been established in order to help salmons to spawn and multiply There are at present 18 fish hatcheries in Sakhalin and the Kurile One such hatchery lies on the banks of a mountain river, 24 km away from the port of Kholmsk This hatchery is well protected and scientifically maintained In 1978, Americans bought 10 million fertilised salmon's eggs from the Russian hatcheries and they are to buy another 10 million this year

(APN)

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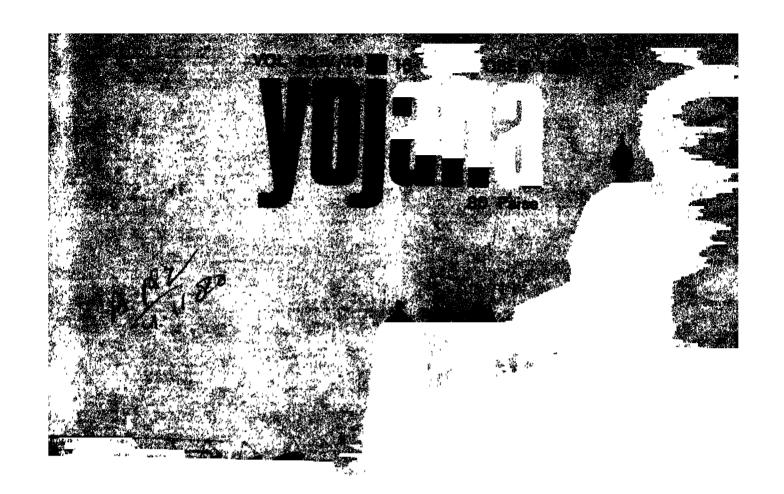
PROBLEMS OF CALCUTTA

What Science can do or Calcutta

Prasant Sur*

TECHNOLOGYWISE and moneywise, Calcutta's problems should be tackled differently. What are the problems of this city ?

To enumerate the problems, I can start with water supply and proceed to sewerage and drainage, traffic and transportation, slums, solid waste sanitation and the cattle. I am, of course, not referring to the large problem of population or density of population in the city. I do not expect the scientists to prescribe any special family planning medicine for Calcutta.

Water Supply

Coming to water supply first, we have a problem of production, distribution and quality. These are being tackled through conventional methods of drawing water from the river Hooghly; treating it, chlorinating and then distributing through a network of pipes. You will, however, be astounded to learn that this water produced at considerable expense is not utilised properly and there is a wastage of about 30 per cent. Production of Palta being 150 million gallons per day, wastage may be as much as 40 million gallons a day. The stand-pipes on the streets, nearly 8,000 in number, pour out water even when nobody is collecting it because there is no faucet or closing machine. At one time these had faucets. These have disappeared because of the resale value of the metallic content of the faucets. All attempts to re-instal faucets have failed.

Is there one among the scientists who would design a faucet which will be pilfer-proof and which can be put to use so that there is no wastage of water. We have tried conventional methods but have failed. It is a small challenge which would result in big savings. For, on the one hand it would save precious water and on the other it would serve more people. If we can put such mechanical devices in the street stand-pipes, we would be saving a few crores of rupees every year.

*Minister for Local Government and Urban Development & Vice-Chairman, Calcutta Metropolitan Development Autnority. Excerpts from his speech inaugurating the Seminar organised by the University College of Science Deptt. of Bio-Chemistry, Calcutta University.

Rabindranath Tagore's House

A street in Calcutta

Have the scientists some answer for rural water supply ? It may be news to them that there are over 550 mauzas or villages within the metropolitan area While we are talking of wastage of water in the city, the villages are suffering from lack of drinking water facility. What should be the best method of rural water supply—is it to be piped water supply or dug wells and tubewells ? Can the irrigation wells be linked to rural water supply ? Also, there is the question of quality.

Cover Photo by K. S. Nagaraj
Line drawings by R. Sarangan

Sewerage and drainage

In sewerage and drainage, we have been assured or rather threatened by foreign experts that we would require over Rs. 1,000 crores for covering the metropolitan area. This is not only high finance but also high technology. Can there be an intermediate technology ? If not, even a primitive one which can take care of our sewage disposal and water logging problem ?

We have heard from many sources that raw-sewage can be used for producing not only organic manure but also there are possibilities to meet our fuel requirements. Petrol crisis being what it is, can there be some method of utilising the raw-sewage of

(Contd. on cover III)

YOJANA

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Editorial Office :
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Whose Public Sector ?

DURING the past 30 years of planning the public sector has grown enormously in size and captured most of the commanding heights of the [illegible] all through its history, its performance [illegible] case of some units, has not been satisf[illegible] to the expectations that it would con[illegible] more to the development of the coun[illegible] economy, has not even been able to generate en[illegible] surplus [illegible] its own development, with the result b[illegible] nue has to buttress it year after year. Acc[illegible] the latest estimates, the public sector is said to have incurred a net loss of over Rs. 600 crore in 1979-80. It has been consistently in the red for the past three years, the net loss totalling up to about Rs. 1,600 crore. During the same period the capital employed in this sector has increased from Rs. 10,887 crore in 1976-77 to Rs. 17,677 crore in 1979-80. And it is proposed to make an outlay of Rs. 60,000 crore on public sector schemes in the Sixth Five Year Plan.

Apart from the financial loss, the shortfalls in infrastructure items like coal, steel, power and transport have adversely affected the other branches of the economy resulting in negative growth rate in GNP in 1979-80. Because of such failures the credibility of the public sector has been eroded and voices are being raised that its role should be curtailed.

The reasons for such a performance of the public sector have often been repeated by political leaders and economic experts, and various organisational and other experiments have been tried for improving it but without appreciable success. The main cause for the chronic malady of the public sector is organic and can be cured only through strong drugs. While its founding fathers chose the public sector in order to get the best of both the worlds of *laissez faire* and central planning, they did not consider the possibility of getting the worst of both the worlds also. They could not be blamed for that since there was a pressing need for industrialising the country and the private capital was not strong enough to perform this task. This, as well as the egalitarian ideal, gave birth to the concept of mixed economy. The dynamics of development subsequently gave birth to the third sector called the joint sector, which has been functioning well for the past seven years.

Meanwhile socialist thought in the West and the East has also been changing—the disillusionment with nationalisation and the dissatisfaction with the trade union monopoly in the West, and the growing insistence on profitability and the incipient movement for independent trade unions in the East.

The present Government is conscious of the "sad, sad case" of the public sector. The specially created Cabinet committee on infrastructure has already succeeded in improving the performance of thermal power stations and reducing congestion in the major ports. The new committee under the chairmanship of Shri Mohd. Fazal, Member of the Planning Commission and an authority on public sector may also suggest ways for putting the public sector on a sound footing. But political will—not merely expert advise—will be required to administer drastic remedies. Unless basic changes, in keeping with three decades of developmental experience, are made, the mixed economy may turn into mixed-up economy. □

Oil Production and Conservation of Petroleum Products

Veerendra Patil*

THE need to step up country's oil production while continuing all our efforts at conservation of petroleum products is well known. Let me briefly mention some facts and figures. The commercial energy requirements of the country today are met by inupts of about 100 million tonnes of coal, a little over 30 million tonnes of oil and about 50 billion units of electricity. Of the oil, indigenous production is about 14 million tonnes. An expert group has estimated that by the turn of the century peroleum products consumption will go up to 69 million tones if strict measures to manage demand are taken, and some 92 millions otherwise.

Prior to November 1973, OPEC countries were selling oil at less than 2 dollars per barrel; now the average price is about $ 32 per barrel and the foreign exchange cost of oil imports which was Rs. 540.90 crores in 1973-74 went up to Rs. 1676.40 crores in 1978-79 and is expected to go up to Rs. 5000 crores this year (80-81). As a proportion of total exports, oil and products imports have increased from 29 per cent in 1977-78 to about 52 per cent in 1979-80 and will rise to about 75 per cent in 1980-81. This places an intolerable burden on our economy.

On the basis of known oil fields which have been taken up for development or will soon be taken up for development, it is estimated that about 22 million tonnes per year can be produced from 1984-85 and maintained for about 20 years. Hence the volume of imports will steadily grow if the demand for petroleum products continues to rise at the present rate. If the price payable for imported crude also increases in the coming years, the burden to be borne by the economy can well be imagined.

Exploration

Obviously, exploration efforts have to be intensified and accelerated. Our government has taken this up on top priority. ONGC has been in business on the on-shore for over 20 years. Starting from 0.04 million tonnes in 1961-62, today's on-shore production is at the rate of 5.6 million tonnes per annum, not including Oil India's output of about 3 million tonnes. Although exploratory works have been carried out practically all over the country, production could be established only in Gujarat and Assam. Wells have so far proved dry in Bengal, Ganga Vallley, Himalayan, Foothills, Rajasthan and Cauvery.

In the on-shore the sedimentary basis occupies an area of over one million sq. kms. The extent of seismic survey done is 1,20,000 line kilometres. About 275 structures for drilling were identified by geological and seismic survey works. 184 were drilled and hydrocarbons were found in 55. While the success ratio of discovery is good it cannot be said that the extent of seismic survey work done is adequate. We have in the recent past introduced more sophisticated equipment for the seismic parties; there is a modern Data Processing Centre a Dehra Dun. The number of parties has also been increased. Better rigs have been pressed into service. Specialised bodies like Institute of Drilling Technology and Reservoir Engineering are now functioning.

As regards off-shore, by its very nature, fast work is possible. Although the off-shore sedimentary area in the continental shelf is about 400,000 sq. kms. and seismic survey work was commenced hardly 8 years back, we have covered 116,000 sq. kms.—practically equal to the work done in the on-shore. We have our own vessel for this purpose called Anweshak which has rendered very good services. Out of 41 structures taken up for drilling in the off-shore, 16 were found hydrocarbon-bearing. There are 20 more structures on hand for drillling. Seismic work is continuing and we expect more structures to be thrown up for exploratory drilling. Commercial oil fields have been established at Bombay High, R-12, B-37, B-38 and North Bassein in the Arabian Sea. Gas fields have been established at South Bassein, B-55, Mid-Tapti and South Tapti, again in the Arabian Sea. Recent dillings in Godavari and Andamans have indicated presence of gas, and drilling has been intensified.

In the next five years it is proposed to drill 261 wells in on-shore and 95 wells in off-shore for exploratory purposes. This will be supplemented by the efforts of Oil India Ltd., who have already been given Mahanadi Basin where work has commenced and may also be given some areas in Rajasthan and West Bengal.

For offshore operations, ONGC has one jackup rig, two are on order and two more will be purchased. This will enable it to do development drilling without any difficulty. To achieve greater self-reliance, ONGC will also purchase supply boats, helicopters and other specialised equipment required on a sustained basis.

In view of the difficult oil situation and having regard to the need for expediting exploration, it has been recently decided that certain areas will be thrown up to suitable foreign parties. A high-powered committee has been set up and it is hoped that some decisions will be taken by early 1981. These parties would

* Minister of Petroleum, Chemicals & Fertilisers.

be inducted after ensuring that both ONGC and OIL would have sufficient work for themselves.

Conservation

Now let me take up the equally important other aspect mentioned by me arlier, namely, conservation of petroleum products. The demand for petroleum products is expected to increase from 29.6 million tonnes in 1979-80 to 45.84 million tonnes in 1984-85 and perhaps to 62.6 million tonnes in 1989-90 at current growth rates and assuming a marginal decline in the later years. This will entail substantial import of oil and petroleum products. It is also doubtful whether we will be able to sustain such an order of consumption. Hence the need for conservation. Though our per capita consumption of petroleum products is only .048 tonne as compared to the world average of 0.72 tonne and this is inevitably bound to go up as we catch up with the rest of the world in economic development, still a tonne of oil saved is more valuable than a new tonne of oil imported or produced indigenously. A rupee invested in energy conservation measures makes more net energy available than a rupee invested in developing new energy resources. Besides, energy conservation costs 1/10th to 1/100th of the money required for expanding energy growth. In order to tackle this matter systematically, a Petroleum Conservation Research Association (PCRA), a registered body of oil industry and Ministries and organizations concerned with oil consumption, has been set up. This organization has, in its studies, identified savings through better operational and maintenance practices in various sectors of the economy.

Drilling has been intensified in Godavari and Andamans where presence of gas had been indicated.

In the Industrial sector, PCRA has studied nearly 950 industrial units consuming 2.78 million kls. of furnace oil and offered recommendations on various aspects of fuel efficiency practices. These recommendations imply a saving potential of 3.60 lakh kls. of furnace oil of which 1,61,000 kls. have already been realized by the users. The main areas of saving in furnace oil are as under :

(a) Storage and handling of furnace oil.
(b) Preparation of furnace oil before combustion.
(c) Correct operation of burners through better draft control.
(d) Instrumentation.
(e) Efficient steam distribution and utilisation.
(f) Efficient operation and maintenance of industrial boilers and furnaces.
(g) Waste heat recovery.

In the Transport Sector, PCRA has completed diagnostic studies in 24 depots of the various Transport Undertakings in India. It is expected that the recommended measures throughout the undertakings would lead to an estimated saving of 6 per cent or 57,000 kls. of diesel oil per year. The areas of potential savings in the Undertakings are :

(a) Training of drivers.
(b) Training of mechanics.
(c) Management control system.
(d) Efficient fuelling practices.
(e) Maintenance system upgradation.

In addition, PCRA conducts clinics and workshops and screens films on diesel conservation.

In the Agricultural Sector, PCRA has conducted a survey on utilisation of light diesel oil in lift irrigation pumps and diesel oil in tractors. Film and print material have been prepared to educate farmers on measures to save diesel in tractors and lift irrigation pumpsets.

Foreign parties will be used for exploration only after ensuring sufficient work for ONGC and OIL.

In the Domestic Sector, PCRA has, through films, print material and nation-wide educational campaign through the press media, sought to educate housewives, motorists and 2-wheeler owners on the measures to save cooking gas/kerosene and petrol. These efforts have been further intensified through participation in exhibitions etc.

Energy conservation has been often referred to as the most promising alternative energy source. The case for conservation is equally true for both developing and developed nations. The onus for conservation falls on both the users and and the manufacturers. The consumers of petroleum products would have to ensure careful use by better operational and maintenance practices and the manufacturer would have to incorporate into his designs efficiency improvements. Conservation, however, is the decentralized issue and its success depends upon the actions taken by the multitude of consumers all over the country. Appropriate incentives would have to be framed for promoting conservation in industries, the transport sector and for the manufacturers of fuel burning equipment. Conservation policies are relatively difficult to enunciate as against energy growth policies and this has been the experience in developed nations also. The role that conservation can play to ease the present energy crisis and smoothen the transition from the present fossil fuels dominant economy to non-conventional resources economy is an undisputed fact. It must unquestionably play a central role in the national energy policies of all nations in the world.

Our recoverable resources of oil are likely to last only for about 20 years.

Limited Reserves

Our recoverable reserves are about 350 million tonnes of oil. These will last us about 20 years at the projected rates of drawal. The position cannot be said to be comfortable. Imports may also become difficult once demand exceeds supply some time in the late eighties. Forecasts of oil price per barrel at $ 60 in the mid-eighties or $ 300 by about 2000 are frightening. There is need for international cooperation in production and supply of oil, keeping in view the needs of the oil deficit developing countries. In addition, we have to intensify exploration of oil in our own country, step up alternative uses of energy and inculcate a habit of energy conservation among our people.

Role of Public Sector in Economic Development

R. VENKATARAMAN*

IT cannot be denied that inefficient operation of certain Public Sector units has seriously eroded the credibility of the public sector, as a motivator of the process of economic growth. I shall briefly refer to some of these failures on the part of the Public Sector and suggest an approach to the rectification of these failures.

While the Public Sector's primary objective is no doubt provision of overheads, it is also expected to generate surpluses for financing economic development. Our Public Sector enterprises have not yielded sufficient returns, even to the extent of self-financing their development. They still rely heavily on budgetary support from the Government for their development programmes. To some extent, deliberate decisions to peg administered prices of certain infrastructural inputs artificially low, have resulted in such industries being unviable. The subsidy element in the price structure of Public Sector enterprises requires to be reviewed on a continuous basis and wherever such subsidisation is infructuous or unnecessary, it requires to be pruned. It cannot also be denied that inefficient operations due to poor management and lack of coordination with other industries, have contributed to losses in Public Sector undertakings. Professional management and close coordination to ensure better utilisation of installed capacity appears to be the only solution to this problem.

Since profits cannot and should not be used as a norm for judging the efficiency of monopoly enterprises, it is necessary to evolve other objective criteria to judge their deficiency. The rate of capacity utilisation and comparison of costs with similar industries are two relevant criteria of efficiency for Public Sector enterprises. I am confident that critical review on the basis of realistic and objective criteria, at a reasonably high political level, would enhance the efficiency of the Public Sector undertakings. But if this review is to be really effective, it should be on the basis of current data rather than on the basis of audit relating to the distant past.

Public Accountability

This leads us to the consideration of public accountability of Public Sector projects. The Public Sector Undertakings Committee of the parliament and the State legislatures do review the functioning of the state enterprises on the basis of audit reports furnished by the Accountant and Auditor General. But, due to the time lag between an event and its final review, it is often difficult to determine responsibility for successes and failures of management of Public Sector undertakings. Also, audit, sometimes emphasises propriety aspects much more than the efficiency aspects. Statutory audit does not sufficiently highlight efficiency aspects These failures, to some extent explain the rigidities in the operation of the Public Sector undertakings and their inefficient results. Rational internal audit procedures and scientific evaluation of the performance of the unit by an audit team well informed of the economics of the industry would inject the required measure of awareness of public accountability into the undertaking. Autonomy and independence in functioning which are demanded by Public Sector undertakings should not be construed as enabling their management to function without public accountability. While there should be no interference in the day-to day functioning of these units by any limb of the Government, the management of the unit should be made fully responsible for the results of the unit. Without this reciprocal arrangement, the management of Public Sector units will either become autocratic or ineffective. Evolving suitable norms of responsibility and performance for the Public Sector management vis-a-vis the Government is of urgent necessity.

Failures at the infra-structural level contributed significantly to the negative rate of growth in G.N.P. in 1979-80. This resulted in well justified public criticism of the functioning of Public Sector undertakings, which has prompted the Government to undertake a number of steps to improve their working. The Cabinet Committee on Infra-structure has reviewed the urgent problems of the infra-structural sectors and evolved solutions for them. Due to frequent review by this Committee the movement of coal to thermal power stations improved and the congestion in thermal ports was eliminated. The recently appointed Fazal Committee would study the crucial Public Sector undertakings in depth, on a unit-by-unit basis and devise methods for improving their efficiency. It is my expectation that heightened public awareness in the working of Public Sector undertakings and purposeful reviews at a high government level will result in their improved performance in the current year.

Complementary

As you are aware, the 6th Plan has envisaged an investment of Rs. 90,000 crores in the Public Sector, in a total Plan outlay of Rs. 1,56,000 crores. When the productivity of investment in the Public Sector has not been commendable, a consideration that is often posed is that the role of the public sector should be reviewed and limited. It is sometimes argued that the growth of Public Sector has stultified the private industry It is posited that free market mechanism would ensure optimum allocation of resources and the efficient functioning of the economy is impaired by imposing a leviathan Public Sector on it. I am not really convinced that private enterprise and efficiency are coterminus.

(Contd. on page 31)

* Excerpts from the Feroze Gandhi Memorial Lecture delivered by the Union Minister for Finance on September 19, 1980

U.N. Decade for Women- Mid-term Appraisal

Smt. Sheila Kaul*

IN the year 1945, the U.N. considered that for problems that needed intensive thought and care, a year should be earmarked for their working. In spite of its best efforts it took time and 1975 was proclaimed as the International Women's Year. A World Conference of the International Year was held at Maxico City to find out means to ensure equality for woman her participation in developmental process and her role in strengthening of international peace. The decisions and recommendations of this Conference were to be considered and given a shape by the U.N. General Assembly and hence 1976-85 was declared a UN Decade for Women.

The Conference at Coopen-Hagen was held to review and evaluate the progress made from the period 1976-80, to take a mid-term appraisal of the implementation of the objectives of the International Women's Year. The participation of 145 countries showed the keen interest generated all over the world. Out of this, 16 delegations were led by men leaders. The Indian delegation consisted of four women Members of Parliament, an advocate, a medical women and two social workers, and a Joint Secretary of the Social Welfare Ministry.

The major work of the Conference was divided into three committees and India chaired the Second Committee. Even at the preparatory stage, India made

*Member of Parliament and Leader, Indian delegation to the Coopen-Hagen Conference

Shrimati Sheila Kaul, Leader of Indian Delegation is seen signing the convention at "Bella Centre" Coopen-Hagen

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Prime Minister Indira Gandhi is seen addressing the Indian Committee of International Women's Year

a substantial contribution in preparing the documents of the Conference, as a Member of the 23-Member Preparatory Committee. It also hosted the ESCAP Regional Preparatory Meeting at New Delhi for this Conference.

The Conference at Coopen-Hagen was, on the opening day, addressed by Dr. Kurt Waldheim, Secretary General of the United Nations. Mrs. Lucille Mair was the Secretary General of the Conference and Mrs. Lise Oestergaard of Denmark was the Conference President, by virtue of Denmark being the host country. Queen Margrethe of Denmark while inaugurating the Conference, emphasised the need for active contribution by women to the development of society.

Plan of Action

The Conference reviewed the progress achieved in fulfilling the objectives of the U.N. Decade for Women in the first half of the Decade and also considered and adopted a plan of action for the second half of the Decade. This plan of action calls for a clear commitment on the part of the international community to give importance and priority to measures to improve the situation of women. Education, employment and health are crucial to women all over the world and it lays special emphasis on these aspects It spells out specific targets at the international regional and national levels. Free and compulsory primary education should be provided to both boys and girls without discrimination. As regards employment, Governments should formulate policies for equality of opportunity, and the guarantee of their right to equal pay for equal work. For women's full participation in developmental work, especially in rural areas, they should be encouraged to take training programmes so that they can impart health care services to their communities; food and nutrition programmes based on the need of the women should be developed. Improved sanitation and hygienic conditions should be provided.

Signing of the Convention

Besides adopting the plan of action which called for the achievement of the minimum goals, such as equal access to education at every level, employment opportunities for women, greater participation of women in policy making at the local, national, international levels, the major achievement of the Coopen-hagen Conference was the 'Signing of the Convention'. On 18 December, 1979, the UN General Assembly adopted the convention on the elimination of all forms of discrimination against women. The 30-Article Con-

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SPECIAL ARTICLE

India and World Recession

Subrata Banerjee*

THE word "recession" in relation to the economic problems of the advanced capitalist world today is really misnomer. Fluctuations in the economy have been a normal and accepted feature. The last decade, however, saw a different phenomenon. The specific features of the so-called recession this time were universality, depth and the long duration. The limited, short-term recoveries that took place only reflected a debt-supported consumer demand for goods. Such a recovery was necessarily short-lived because the burden of debt repayment and interest charged reduced the disposal surplus.

The reality is that the world capitalist system has entered a period of long-drawn crisis. Its features have become quite clear during the last decade : chronic under-utilisation of capacity by the monopoly groups to maximise profits leading to chronic unemployment, raw materials and energy crisis, because of rapid depletion through pillaging, and contamination and pollution of environment hampering reproduction ; simultaneous spread of the crisis to all major centres of the world capitalist economy because of greater interdependence ; aggravation of unemployment due to increasing automation, under conditions of technological revolution, as a possible way out of the crisis ; and finally inflation, resulting from budgetary deficits, increased money-supply and cost-push factors, leading to further erosion of purchasing power. This is an expression of the impending crack-up of the hire-purchase consumer economy.

Deficit Financing

Even in conditions of crisis, inflation does not today bring about a fall in prices. Deficit financing provides budgetary subsidies to the monopolies, which systematically force prices upwards. At the same time military expenditure continues to rise at the expense of the general public. This is unproductive expenditure as it produces nothing for human consumption. Whatever it produces destroys human beings and in the process goes up in smoke. The present crisis has proved that militarisation of the economy is no solution.

The crisis is also monetary. World currencies have become unstable. Contradictions and conflicts of interests within the capitalist world have also increased. The Trilateral Commission has been set up precisely to contain these contradictions. But as the crisis gains in extent and depth so will these contradictions increase and further aggravate the crisis situation. The crisis is indeed all pervasive.

Repercussion

Such a crisis is bound to have its repurcussions on non-socialist developing countries, especially India. Despite non-alignment, despite our growing economic relations with the socialist countries, our economy is still very closely integrated into the world capitalist system. The advanced capitalist countries of the West continue to be our biggest source for imports of manufactured goods and machinery and our biggest market for raw materials and labour-intensive manufactured goods.

According to the Organisation for Economic Cooperation and Development the price index in the West is expected to rise by nine per cent in the 1980s and unemployment by over six per cent of labour force. Price increase would adversely affect our balance of payments deficits. The OECD apprehends a widening of this deficit for all third world countries to 60 billion dollars as the economic growth rate of European nations falls to two per cent. India already has a trade deficit of $ 200 million with the USA.

In such a situation there is bound to be a lower volume of imports and a reduced demand for commodities in the advanced capitalist countries. The World Bank Development Report 1980 clearly points out that with inflation and the falling purchasing power of exports there will be a fall in real prices of raw materials such as iron ore. Significantly iron ore accounts for 35 per cent of India's total exports.

Every measure taken by the advanced capitalist countries to protect the interests of their monopolies in this period of continuing and deepening crisis, will adversely affect the developing countries including India. Aid will be used more as a weapon for developing exports to improve their own balance of payments position. The theory of redeployment will be used to off-set to some extent the energy crisis by setting up such labour-intensive industries in countries like as ours, which are at the same time highly raw materials and energy consuming. Aluminium for instance consumes 70 to 75 kwh of power.

Pressure for Foreign Investment

There is likely to be greater pressure for liberal foreign investment. It is significant that the US private and government investment in the Third World in-

*Journalist, New Delhi.

The Views expressed in this article are those of the author and do not reflect those of YOJANA or the Planning Commission

creased from $17,400 in 1975 $110,000 million in 1976. This was immediately after the worst phase of the crisis of 1974-75. This investment can be expected in export-oriented industries based on cheap labour and local raw materials. Intermediate products would also be covered, increasing the pattern of incomplete cycle of production and hence continued dependence instead of full technology transfer.

The US transnational banks are overflowing with petrodollars. There is little scope for investment at home or cross-investment within the advanced capitalist countries because of the crisis. Latin American market also seems to have reached satuaration point. Hence the fresh interest in Asia, and India provides the biggest potential market.

Every measure taken by the advanced capitalist countries to protect the interests of their monopolies in this period of.... crisis will adversely affect the developing countries including India.

Purposive Action

The World Bank and the IMF strategies have been well integrated with the present perspectives of the world capitalist system. Their funds will now be mainly available for energy development. In this connection the World Bank has called for "more purposive action" to encourage private foreign participation in oil. This would ease the West's total dependence on Arab Oil.

The World Bank has also suggested measures for the expansion of exports without cutting down on imports. At the same time it realises that slower world trade and protectionism will make exports difficult. India's foreign exchange earnings from West Asia is not likely to be as high as before. The cushion of foreign reserves is declining fast. With rising price, loans in real terms will decline, while the real burden of debt servicing will increase.

Some indication of future problems is available from the recent imposition of countervailing duties on certain items of export from India. Imports from India constitute only a small percentage of massive annual US imports. The impact on such imports from India on unemployment is certainly much less than technological displacement of labour. This is a combination of economic and political pressure on India to compel it to follow economic and political policies conducive to US interests. This is the price we are paying for the compromise at Tokyo.

World Bank Prescription

The World Bank prescription for India is also in harmony with US policy. It recommends avoidance of the import substitution bias; conservation of energy and increase in domestic productions of energy with the cooperation of private foreign capital and strong export-import base to attract private foreign investment. Under the compulsions of the existing economic situation in India certain steps have already been taken in this direction.

The World Bank also admits that the world economic situation is much worse than the 1974-78 period. As part of the world capitalist system we cannot possibly escape the repurcussions of the crisis faced by the advanced wing. On the contrary some of the effects of the crisis will be passed on to us through the various channels of our economic relations with them.

Some of the effects of the crisis (faced by the advanced countries) will be passed on to us through the various channels of our economic relations with them.

A typical example is our jute trade. The USA is the largest buyer of the jute products, especially carpet backing. At one stage, to beat down price US importers turned to substitutes from petrochemical products. In the process they used political and economic pressures on Bangladesh, the leading producer of jute and jute manufactures, to bring down prices instead of joining with India and Nepal to stabilise prices. The result is, today the Bangladesh jute industry is facing a crisis and the major victim is the poor jute grower.

With petroleum prices on the increase jute is once more competitive in relation to substitutes. There is thus no reason why jute should not fetch a higher price. A jute delegation from India is visiting the USA. Will it succeed in securing higher prices? It is doubtful. Apart from lack of unity among the Third World jute producers, the shrinking consumer market is also a factor to be considered The crisis is thus likely to affect our jute industry adversely. This will be added to the impact of the countervailing duties already imposed on a number of our export items

In the situation we find today socialism, despite its enshrinement in the constitution, is a distant dream or even an illusion.

Socialism, a distant dream

In this context, liberalisation of imports, foreign investments in export-oriented industries and of capacity expansion entailing further imports may appear to be a viable growth-oriented policy in the short run What remains to be seen, however, is the impact it is likely to have on development in terms of human beings. Such a policy, like the selective green revolution strategy, is likely to aggravate imbalances in every sector of the economy. At the same time the integration with the world capitalist system is likely to become stronger. As weaker partners, whatever may be our delusions of grandeur, we are likely to be more and more at the receiving end of the deepening and expanding capitalist crisis. This is the problem the show-pieces of World Bank strategy—Brazil Korea, and others are facing. Even proper capitalist development is impossible without infrastructural changes, especially in the countryside, and greater self-reliance through import substitution. In the situation we find ourselves today socialism, despite its enstrinement in the constitution, is a distant dream or even an illusion. □

Economic Development in Iraq

Dr. Mohammad Iqbal*

IRAQ, with the old name of Mesopotamia, the land between the rivers Tigris and Euphrates, stretches over an area of 438,446 km., and there exists a neutral zone of 7,000 sq. km., between southern Iraq, Kuwait and northern Saudi Arabia which is administered jointly. Nomads move freely through this zone, but there are no permanent inhabitants.

Iraq has a population of 13,181,560 It is traditionally an agricultural country. However, its economic development is largely attributable to its oil industry. It is otherwise an underdeveloped country.

The recent economic history of Iraq falls into three periods; from the beginning of the British mandate in 1920 to the great increase in oil exports in 1950; from 1950 to the revolution of July 14, 1958; and from the revolution to the present. The dividing lines between these periods are both political and economic.

During 1920-50 Iraq experienced some economic development, but the rate of development was slow. Between 1933 and 1950 the government did devote a significant portion of its expenditure to capital projects—the portion rarely falling below one-tenth, and for the latter part of the thirties running between one-fourth and one-third. But the development expenditure during the forties had fallen back to the level of the early thirties. For this lack of consistant progress a combination of factors was responsible. On the political side, Iraq was troubled with domestic dissent among the Kurds, Bedouin tribes and the like, by disturbed relations with Britain, the problem of the Palestinian refugees and the second world war. In short, between 1920 and 1950 there was a scarcity of both capital and skilled labour in Iraq.

During 1950-58 Iraq entered an era of accelerated economic and social development which had no parallel in its history since the golden age of Abbassid Caliphate, some twelve centuries ago. The phenomenal wave of oil output which followed the completion of a complementary 16-inch pipeline to Tripoli in 1949 triggered off the economic up-swing which was sustained by uninterrupted increases in oil production in the next five years.

Planning

On the verge of great increase of petroleum production, economic planning was inaugurated in Iraq with the creation of a Development Board in 1950 and the launching of a six-year Plan in 1951. The original law allocated to development the entire flow of oil royalties of the government, but two years later, because of the expanding functioning of the government and the attending budgetary load, 30 per cent was thenceforth to go to ordinary budget purposes, leaving 70 per cent for development. Even so, the funds were substantial. In 1953, a new law was enacted which deprived the Development Board of its political autonomy by placing it under the Ministry of Development.

By 1955, before the first Plan had run its course, a new Plan was presented to the parliament, partly to take account of the rapid increase in oil revenues. After the passage of the year, a modified Plan for six years, 1955-60, was put into effect. It differed from the Plan of the previous quinquennium in important respects. Its rate of planned expenditures amounted to Iraqi Dinars 85 million annually, in place of the ID 31 million of the first Plan. It was more decentralized in control. In the sphere of agriculture, emphasis was shifted from flood control to irrigation, drainage, and reclamation since the problem of floods had largely been surmounted. More importance was given to improving transportation facilities, both rail and road, because of the realization that increased production was pointless without an adequate marketing mechanism. Industry received a higher priority than before. And finally, "the new factory syndrome" of the first Plan was off-set by giving attention to the better use of existing plants.

The Board allocated nearly all of its revenues during the first year Plan, 1951-56, but the actual expenditure was only about half of its revenues.

During the first two years of the second six year Plan, the annual revenue of the Board fell off from the level achieved in 1955-56, which was ID 60.8 million. Because of this, expenditure came closer to revenue in 1956-57; and in 1957-58, when the closure of the pipeline through Syria occurred, expenditure exceeded revenue. Allocation for agriculture exceeded other allocations in the first Plan and it declined in relative importance in 1957-58.

Unbalanced Growth

Prior to the 1958 revolution, development programmes were conceived as lists of economic projects, unrelated to overall economic planning and with special emphasis on investment in social overheads as against directly productive projects. In the post-revolution period the development strategy shifted in favour of

*Centre of West Asian Studies, Aligarh Muslim University

directly productive investment, particularly in industry, with more serious thought being given to the relation between investment project and broader development objectives, such as doubling the national income, industrialisation and so on. It was estimated that between 16 and 25 per cent of the gross national expenditure was channelled into investment in the form of fixed capital during the period 1950-55.

The massive investment achieved a reasonable but not altogether balanced economic growth in the fifties. While mining, manufacturing and construction grew at the rates of 8, 11.6 and 7.8 per cent per annum respectively, agriculture, which contributed about 24 per cent to the gross domestic product lagged seriously behind with a rate of growth not exceeding 2.4 per cent per annum. The overall rate of growth of the gross national product in 1950-64 period, however, was about 7 per cent per annum. Excluding the oil sector, which contributed more than one-third of gross domestic product, the growth rate of the economy was about 6 per cent per annum. This imbalance in growth meant that by the end of the fifties there was not much improvement in the condition of the rural people.

Statistical data on the sectoral origin of Iraq's Gross National Product (GNP) reveal the average percentage for the year 1950-65 :

Sectoral Origin of GNP 1950-65

Sector	Percentage of distribution
Agriculture, forestry and fishing . .	24.4
Mining and manufacturing . . .	13.8
Construction	7.7
Transport and communication .	4.2
Trade	11.5
Government and services (including royalties from oil)	38.4
	100.0

The contribution of the agricultural sector to gross national product declined from an annual average of 28 per cent in the 1945-49 period to 26 per cent in the 1953-55 period and 19 per cent in the 1958-64 period. Crude oil production was on the increase throughout the period except in 1957 when a drop of 33 per cent was recorded because of the Suez crisis. The growth of the non-agricultural sectors (excluding oil refining) was erratic and unbalanced.

Industry and Agriculture

Generally speaking, industry in Iraq has always been composed of a developed export-oriented sector engaged in oil extraction and of a relatively very small manufacturing sector producing consumer goods such as food, beverages, tobacco and, from 1952 onward, textiles and simple electrical goods. In 1960 local industry delivered as high as 98.3 per cent of total consumption of tobacco and tobacco products and as low as 1.6 per cent of basic metals, the difference being covered by imports. Local production in other selected items was as follows : beverages (97.6 per cent), foodstuffs (35.5 per cent), footwear (95.4 per cent), wearing apparel (75.0 per cent), textiles (29.8 per cent), leather and its products (80.2 per cent), vegetable oils and soaps (73.4 per cent), chemicals (7.3 per cent), grain milling (85.0 per cent), furniture and carpentary (71.8 per cent), metallic products (25.8 per cent) ; paper printing and publishing (39.6 per cent); manufacturing (41.5 per cent); petroleum products (95.2 per cent) and equipment (8.8 per cent).

In Iraq agriculture is the main source of employment and the most important sector after oil. The country's latest development Plan (1976-80) gives high priority to industry, but agriculture continues to be important, the aim being to produce an agricultural surplus for export by reducing dependence on weather conditions and solving the salinity problems which affect irrigated land. The Plan has allocated funds for several vast land reclamation and integrated farming projects. However, the development of agricultural techniques and productivity has been inhibited by the lack of security in rural areas arising from the disruptive activities of large land owners. Cash crops are grown by plantation farmers and peasant proprietors. Crops vary considerably but the largest and the most commonly grown crops are barley and wheat.

Normally Iraq produces an exportable surplus of barley. The principal summer crops include rice, dates, tobacco and sesame. Dates are, after oil, the biggest export commodity. Iraq exports dates to various countries including Australia and China. Cotton is grown on a small scale in central Iraq.

New Plans

Between 1958 and 1968 there were political upheavals in Iraq and these adversely affected economic development. On July 14, 1964, the government announced the nationalisation of the banks, insurance companies, and 32 industrial concerns, including those producing asbestos, cement, cigarettes, textiles, paper, tanned leather and flour. On December 3, 1967 all the privately-owned newspapers were taken over by the government. A new Five Year Plan for the period 1965-66 to 1969-70 was put into effect. For a number of years previously, the main emphasis had been placed on construction, transportation, communications, and industry. In industry, public sector projects included sulphur extraction, textiles, paper, pharmaceuticals and glass. The new Plan gave greater importance to agriculture and contemplated investment as follows :

Iraq has been occupying the fourth place in West Asia with oil income equivalent to 43 per cent of Saudi Arabia's and half of Iran's and Kuwait's. In Iraq, this income and the outlays of foreign oil companies have been associated with the country's tremendous growth of GNP. The multiplier effect of oil production seems to be great, since neither Iraqi production in agriculture, industry nor indeed all domestic activities together can rival the petroleum industry. But oil wealth alone does not solve all the problems; short-run variations of national income have not always been traceable to oil, and the reserves of petroleum estimated to last for about 50 years, cannot obliterate

Public Investment Programme, 1965-66 to 1969-70

(in millions of dollars)

	Estimated expen-diture	per cent of total
Agriculture	$ 398	25
Industry and electricity	$ 440	28
Transportation and Services	$ 255	16
Government building	$ 304	20
Others	$ 174	11
Total	$1,571	100

Estimated	Resources
Government savings (50% of oil reserves)	$ 1134,000
Domestic borrowing	$ 171,000
Foreign borrowing	$ 266,000
Total	$ 1571,000

the fact that it is after all a non-renewable asset. This necessitates the development of economy in all other fields.

The latest five year development Plan (1976-80) calls for a total expenditure of more than ID 10,000 million, at an annual rate of investment ID 2130 million. Major objectives remain diversification of industry and self-sufficiency in agriculture. Emphasis is also placed on improvement in education and other social services. An important aim is to narrow the gap between standards of living in urban and rural areas. Thus, the Plan aims at the simultaneous development of both agriculture and industry. The completion of the industrial projects (petro-chemicals, aluminium, iron, steel, phosphate fertilizers etc.) of the Plan is likely to make Iraq's exports of these products no less important than oil. If internal and external peace is maintained and the Plan is fully implemented, Iraq can make giant strides towards all-round prosperity. □

Iraq is occupying the fourth place in West Asia with oil income equivalent to 43 per cent of Saudi Arabia's and half of Iran's and Kuwait's.

(This article was written before the outbreak of war between Iran and Iraq)

Announcement

Due to enormous increase in the cost of paper and printing, we have been compelled to increase the price of 'Yojana' with effect from November 1. 1980. In spite of this increase, which has come out after many years, only a part of the increased cost of production is sought to be met and the 'Yojana' editons will still be sold below the cost price. The new rates are as follows :

Name of the Journal	Existing price/ Subscription		Revised price/ Subscription	Revised Foreign Price		
YOJANA (English) Fortnightly	Rs. 0.80	per copy	Rs. 1 00	$0.30	or	£0.15
	Rs.18.00	1 year	Rs.20.00	$6.00	or	£3.00
	Rs.30.00	2 years	Rs.35.00	$10.50	or	£5.25
	Rs. 42.00	3 years	Rs.50.00	$15.00	or	£7.50
YOJANA (Hindi) Fortnightly	Rs. 0.60	per copy	Rs. 1.00	$0.30	or	£0.15
	Rs.13.00	1 year	Rs.20.00	$6.00	or	£3.00
	Rs.22.00	2 years	Rs.35.00	$10.50	or	£5.25
	Rs.31.00	3 years	Rs.50.00	$15.00	or	£7.50
Other language editions of Yojana	Rs. 0.50	per copy	Rs. 0.80	$0.25	or	£0.15
	Rs.10.00	1 year	Rs.16.00	$4.80	or	£2.40
	Rs.17.00	2 years	Rs.28.00	$8.40	or	£4.20
	Rs.24.00	3 years	Rs.40.00	$12.00	or	£6.00

Business Manager.
Publications Division.

Jute Policy : Monopoly Procurement Vs. Canalisation

Tarit Kumar Datta*

RAW jute is one of the *important* cash crops in the North-Eastern India. But due to the fluctuations in the raw jute market, most of the growers do not get reasonable price. Various measures have already been taken to stabilise the raw jute market but owing to mani-fold difficulties none of these measures have yet been effective. The net result is that the growers are deprived of fair price. In this background the Central Government announced in 1979 to make monopoly purchase of raw jute. Undoutedly, this would be a very important step towards stabilisation of jute market. But, whether monopoly procurement is essential to combat the existing irregularities in the raw jute market for protecting the interests of the growers, or a system of canalisation of raw jute market would serve the purpose has now become a million-dollar question. The Central Government must take a concrete decision in this regard considering the economy of monopoly procurement vis-a-vis a system of canalisation of raw jute.

Monopoly Procurement

The aim of monopoly procurement is two-fold (a) to stabilise and regulate the raw jute market, and (b) to ensure fair price to the growers. But before starting monopoly procurement certain other measures should be taken care of. (1) Funds : At present, to purchase an average annual production of 76 lakh bales of jute, the Government needs at least Rs. 350-400 crores in one jute season. (2) Purchase Centres : There should be at least one purchase centre for 10,000 growers. So, at least 400 purchase centre would be required to fulfil the needs of 4 million growers. At present there are only 133 centres of Jute Corporation of India. (3) Godowns : The Corporation can handle hardly 15 lakh bales now. (4) Fair price : The present method of price fixation should be scrapped and a new method should be introduced where the price will cover the cost of production, marketing and reasonable returns. (5) Specify the class of persons from whom the Government would purchase. Elimination of the small and village based farias would pose serious problem of unemployment in rural areas.

Unless these measures are taken prior to monopoly procurement, the whole scheme would be turned into a big fiasco and the objective belied.

System of Canalisation

At this stage there is one alternative to monopoly procurement and that is a system of canalisation of raw jute. The term canalisation may be interpreted as the introduction of certain regulartory measures to empower the Jute Corporation of India to be the only linking 'Canal' between the raw jute market and the mills. This means that the JCI will perform the same task which the commission agents are performing at present in the terminal market.

The salient features of canalisation system will be :—

(1) The JCI will be the sole organisation to sell raw jute to the mills and abroad. (2) There will be no restriction on purchasing quantity of private traders, but they should sell to the JCI. (3) Certain other organisations like the co-operative societies, village and Anchal Panchayats, Krishi Samanvaya Samity and Small traders' co-operative societies etc., will be engaged in purchasing raw jute at Government fixed price. The JCI will monitor the purchase at officially fixed price. (4) The JCI should also be prepared to buy from the growers in any situation specially to foil any attempt of the private traders to create pressure by abstaining from purchasing in the market. (5) Usual practices will be followed to determine the grade of jute and to settle the claims at the mills. (6) the JCI should fix a service charge of Rs. 5 per bale and thereby earn Rs. 3.50 crores a year.

Conditions

But success of the canalisation system will depend on certain conditions. (a) Legally the JCI should be made the only agency to sell jute to mills and foreign countries. (b) The commission agents should be prohibited by law from selling jute to mills or abroad. (c) The mills will not be permitted to buy in any case from private party (d) Legal steps should be taken to compel the private traders to sell their jute to JCI. (e) The selling price should be calculated after deducting certain costs. (f) The purchasing price should be more or less uniform all over the country throughout the year. (g) The gap between the floor and ceiling prices should be reduced by raising the floor up specially in case of higher grades. (h) The staff strength of JCI should be increased when needed.

Benefits

The canalisation system has many benefits. (1) The entire raw jute market will be brought under 'effective control' of the Government without making any major change in the existing marketing system. (2) It will make possible to delink the private traders from the mills and thereby eliminate a class of unscrupulous traders along with various mal-practices practised by them. (3) It will save the investment of Rs. 350-400 crores of public money only to procure raw jute, specially when a number of national projects in the priority sector are facing acute shortage of investible fund (4) The system will protect the interest of the growers as well as village-based, small farias and will pose no question of unemployment. (5) The entire staff salary of the Corporation may be met by a portion of the fund collected by way of service charge, while the remaining portion may be spent on jute research and building jute-complex in the country. Thus, the loss-running-Corporation will be turned into a profit-making concern.

Indeed, introduction of canalisation system will be a more effective measure to control the raw jute market in its present shape, which will ultimately pave the way for monopoly purchase. □

*Research Scholar, Jadavpur University

Small is not always Beautiful

the Punjab way

V. S. Mahajan*

PUNJAB has been publicised to have reached a high stage of growth of small industries. This is claimed both by experts within and outside the country. And Ludhiana is fondly referred to as small-scale industries capital of South Asia.

But really there are not many small units which are economically viable. If these continue to survive it is all due to the enterprising spirit of the multitude of skilled and semi-skilled people who work hard mostly with their family labour in their tiny homes.

As there is no clear distinction between small and tiny industries, the latter, which in fact dominate the landscape of Punjab, have been labelled as small industries. These are very tiny family units, at times employing hired labour, and having total investment of a few thousand rupees. One does not have accurate data of these units functioning in Punjab, for these do not get their names registered with the District Industries Offices. Also these offices do not bother to make a proper census of these units under their area of administration.

(1) Really there are not many small units which are economically viable. If these continue to survive it is all due to the enterprising spirit of the multitude of skilled and semi-skilled people who work hard mostly with their family labour in their tiny homes.

An analysis of the pattern of registered units in Punjab shows that over a period of 11 years (1966-77) there had been hardly any change in the average size of the registered factory. Also the average employment size of 27 in registered factories, was so low a figure that the factory could not be classified even as a medium unit. It is further found that among the registered units only 40 per cent submitted returns of working to the Administration. It is not known why there was such a high rate of default.

More interesting is the examination of the size of units. In 1966 there were only seven large units with employment over 1000 per unit. They rose to eight and eleven in 1976 and 1977 respectively. While one may add that there might have been some large units which did not report—though such possibility would be remote, it is found that the average size of the large unit (1800 workers) did not undergo any change during this period. There was not a single unit in the State with employment above 5000 (perhaps not above 2000).

*Reader in Economics, Punjab University

If this is the state of affairs of registered units one can well imagine the situation of unregistered ones which, as mentioned earlier, far exceed the number of registered units. Further, while the contribution of unregistered industrial units to the State income rose from Rs. 22 crore in 1960-61 to Rs. 123 crore in 1976-77 (at current prices), the contribution of registered units during the same period rose from Rs. 18 to 148 crore respectively. This shows that while in 1960-61 the total contribution of the unorganised industrial sector was Rs. 4 crore higher than that of the registered sector the same declined by Rs. 25 crores in 1976-77. Thus starting at comparatively better position in 1960-61, the unregistered industrial sector, despite the large growth in number and all the assistance offered by the Government, is putting up far poorer performance than the registered sector. Further, if one could have detailed data of the contribution from the various size groups of units in the registered sector, one would notice that the major contribution to the State income has come from a few top 20 to 30 per cent of industrial establishments. All this shows that higher growth rate in industrial income can only come from increasing the size of production unit and also diversifying the industrial economy, that is establishment of modern industrial units with high growth potential and which could as well sustain a large number of ancillary units.

It is interesting to find that in Punjab whose per capita income is double that of the nation, the income from 'livestock' in 1976-77 was nearly 80 per cent

Cycle Industry in Punjab

11 DPD/80—4

higher than the combined income from registered and unregistered industrial sectors of the State. Further, while the income from 'livestock' in 1960-61 was Rs. 29 crores as against combined income of Rs. 40 crores from organised and unorganised industrial sectors, the same rose to Rs. 406 crore for livestock and Rs. 271 crores for the industrial sector in 1976-77. Interestingly Punjab's industrial sector has been even lagging far behind the growth of livestock sector.

It shows that the Government's efforts towards the growth of small and tiny industrial units have neither helped to bring larger contribution to State income nor helped to transform the structure of Punjab's industrial economy. Further it would be futile to think that Punjab's virile economy could be sustained either through 'livestock' or even farm sector. It is unlikely that growth rates in these sectors are going to be repeated in future. Also the high growth rate in the number of small and tiny industries does not make sense unless these are economically viable. That is emphasis should be on the size, product and plant efficiency of the industrial unit.

Thus some fresh thinking is needed on the pattern of industrialisation of Punjab and the State has to adopt a strategy for long-term growth of basic industry. □

Non - Traditional Agricultural Exports

Dr. G. S. Kamat*

INDIA has always been a substantial exporter of items like tea, spices, coffee, tobacco and oil cakes. But her comparative advantage is perhaps, greater in a variety of non-traditional agricultural exports like rice, meat, eggs and vegetables, which also provide opportunities for large scale employment.

Surpluses

A break through in production of many crops, both perishables and non-perishables, has been achieved in recent years. Various committees and the task forces appointed by the Government of India on the subject of increasing exports of farm produce, generally agree on the desirability of its enlarged exports. They provide a dependable outlet, improve profitability, give support to domestic prices and earn the much needed foreign exchange. India has a particular advantage of having a relatively lower cost of production and fairly regular surpluses in production. It has acquired new technological confidence as well.

Case For Rice Exports

Despite last year's drought, India is going to have a marked surplus of rice and the procurement level may be around four million tonnes. This is marginally more than the expected off-take from the public distribution system. Almost persistantly India is experiencing rice surplus over the past few years and it constitutes about 60 per cent of the total food stocks (against barely 10 per cent a few years ago). These stocks are more than two years, off-take from the public distribution system (about nine million tonnes). It stands to reason, therefore, that rich exports should be not only encouraged but made an integral part of the export strategy during the Sixth Plan period.

Constraints

Lack of market information is a great constraint to the exporter. He should be able to know the prices, quality, availability, packing variety etc. obtaining in the export markets. Due to inflationary conditions, frequent shifts are noticed in prices and availability Further, there is need for greater market orientation to the export activity. For example, it is more profitable to export processed goods than raw produce. What is presently happening is that we are trying to export what we have, in a form and at a time convenient to us while we expect to receive the price that we desire. It is equally necessary that export procedures are simplified and made less cumbersome.

Quality And Training

There is need to take particuar care of quality of export commodities since they are largely sent to developed countries having sophisticated markets They have a high degree of awareness of quality and are supported by stringent food and quarantine laws Recently, there is emerging keen competition from other agricultural countries of Africa and Asia. The Agricultural Produce Grading and Marking Act (AGMARK) does provide for grades and standards for a large number of commodities, Further, Sea Customs Act (1978) also provides for compulsory grading and preshipment inspection. The Agriculture and Food Product Division of the ISI has also formulated standards for various agricultural and food items. A statutory body Export Inspection Council of India advises the Government on quality control and preshipment inspection of exportable commodities Number of agencies have been recognized for the purpose, including Directorate of Marketing and Inspection. This has brought down many operational hazards in the export trade. It has also helped in developing new markets for agricultural exports. However, there is still much to be done in the field of standardization of packages and packing techniques.

Apart from collecting relevant data and information, providing standards for quality etc., there is need to organise export oriented short courses in agricultural universities and other interested institutions. □

*Is with the Vaikunth Mehta National Institute of Co-operative Management, Poona.

Whither Coastal Shipping ?

K. L. Thakral*

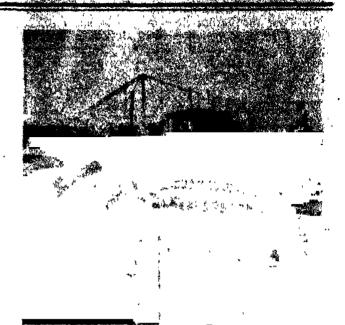
COASTAL shipping is the most efficient and the cheapest mode of transport for carriage of builk cargo over long distances. India's long coastline, extended over 5660 kms with a number of ports, offers immense scope for the development of coastal trade.

The coastal fleet has gradually declined from 79 in 1951 to 57 in 1979. In 1979 the fall in the coastal tonnage to 2,56,000 GRT from 399000 in 1978 was on account of transfer of the coastal vessels to overseas trade on the basis of actual licenses granted to the vessels. There was some transfer of vessels on the reverse direction too. On an overall basis, the net outgo from coastal tonnage was 1,47,957 GRT. Shipping Companies have a tendency to withdraw from coastal business as soon as the vessels fall due for scrapping and do not acquire new vessels. This demonstrates the fact that coastal shipping as presently operated is highly uneconomic and the shipping companies want to get out of this business.

Shipping Companies have a tendancy to withdraw from coastal business as soon as the vessels fall due for scrapping and do not acquire new vessels. This demonstrates the fact that coastal shipping as presently operated is highly uneconomic and the shipping companies want to get out of this business.

Ownership Pattern of Ships

At present, there are 57 coastal ships in the country owned by 27 shipping companies, 24 ships (42 per cent) are owned by Shipping Corporation of India and Mugal Lines, the two public sector shipping companies. The remaining 58 per cent are owned by private shipping lines. Tonnagewise 56 per cent of the coastal tonnage is owned by the two public sector companies, the balance is owned by 25 shipping companies in the private sector.

*Senior Research Officer, Planning Commission.

Various items of small scale industry stacked at a jetty on Hooghly river, Calcutta

Data for the year 1979 shows the existence of a large number of single ship owners. The shipping companies owning one vessel form 63 per cent, two vessels, 22 per cent, 3 to 6 vessels 11 per cent and 15 vessels, 4 per cent. The industry in its present structure cannot face effectively the competition from the other modes of transport.

Age Composition

There are 22 ships which are 68,306 GRT and over 20 years old. Five more ships with a tonnage of 21871 GRT will complete their economic life during the next 5 years. Thus, 27 ships with a tonnage of over 90,000 GRT will need to be replaced during the sixth plan 1980-85. However, past performance shows little progress on the replacement of overaged fleet.

Coastal Traffic

Coastal shipping moves both dry and wet cargo. The wet cargo traffic increased from 8 lakh tonnes in 1955 to about 34 lakh tonnes in 1969. It declined thereafter and is now stabilised around 20 lakh tonnes. As regards dry cargo, the main commodities are coal, salt, cement and general cargo consisting of food-grains, fertilisers, jute, tea, iron and steel products etc. The traffic in all types of cargo dwindled but the fall is the steepest in the case of general cargo. The reasons for declining coastal traffic are :

(a) Competition from railways and road transport. Telescopic freight rate policy of railways and the door-to-door service provided by road transport wean away the potential coastal traffic.

(b) Higher transportation cost by coastal shipping where the point of origin or destintion of particular traffic is not located on the coast but is located in the hinterland.

(c) Imbalance in coastal traffic movement as the traffic is not available in both directions resulting in ships sailing in ballast. According to a study, while there were 67 sailings from Calcutta to destinations on east and west coasts the cargo available on the return journey was only for 36 sailings. Thus 31 sailings were made in ballast.

(d) Poor turn-round time of coastal ships on account of overaged vessels, lack of mechanical handling facilities, go slow and strikes by the port labour; non-availability of coal for loading on arrival of the ships at the berths also contributes to poor turn-round of vessels.

(e) Port delays involving heavy losses to shipping companies in 'standing costs' more than neutralise the comparative advantage of coastal shipping over surface modes of transport.

(f) Geographical factors are also responsible for the decline of coastal trade. Ships going from east coast to west coast have to make a detour along Sri Lanka since the passage between the Gulf of Mannar and the Palk Bay is not navigable. Such detour is also unavoidable for the sea voyage from Calcutta to Tuticorin. This results in greater transit time and haulage costs.

...... 119 lakh tonnes of traffic will be available to the industry in 2000 A.D. This, therefore, calls for strengthening the industry suitably to cater to the increasing requirements.

(g) Economics of coastal shipping in India suffers from the fact that movement is required mostly from inland originating centres to inland destination centres rather than from port to port. Consequently, surface transport becomes an essential adjunct to Shipping Industry. As it is, this involves double handling, increases the total transport cost and tilts the balance against coastal shipping.

Coal and salt are the two principal commodities moved by coastal shipping. Coal is loaded at Calcutta for transportation to Southern and Western India. Salt is unloaded at Calcutta. It, thus, provides the return cargo for colliers. Calcutta port thus plays an important role in the coastal trade of India. However, shallow draft at Calcutta made it dificult for the industry to take advantage of its full potentialities. It was expected that development of Haldia port would provide year round accessibility to deep draft ships, thereby bringing considerable time and cost savings. Haldia port was commissioned in 1977 but full benefits have not become available on account of certain operational problems. For example, poor functioning of the mechanised coal handling plant at Haldia has adversely affected the movement of coal by sea. Although the plant has a rated capacity of 3.5 million tonnes per year or 12,000 tonnes per day, the actual performance is only 1500 tonnes owing to various reasons. Another problem in the efficient functioning of coastal shipping is the delay in the construction of coal berth at Tuticorin. Once this berth is constructed, turn round time of vessels sailing between Calcutta-Haldia to Tuticorin would be reduced. This aspect needs to be examined by the concerned Administrative Ministry.

Subsidy on movement of coal

Coastal movement of coal has been found essential because Railway system is not in a position to handle the coal traffic now transported by coastal shipping. The cost of movement by rail-cum-sea route is higher than that of all rail route. To sustain coastal shipping, Government of India introduced, in 1961, a subsidy on coastal freight rate to relieve pressure on the railways and to equalise the freight by the two modes of transport. The subsidy on coastal shipment of coal has been there for many years. Extension of subsidy was linked up with the commissioning of Haldia port. As already mentioned it was thought that after Haldia was commissioned and unloading facilities at ports like Madras and Tuticorin improved, the difference in the freight rates would be reduce to a large extent and would be eventually eliminated. However, little progress has been made in this direction on account of teething troubles at Haldia where the performance is much below the expectation. It is essential that the concerned Ministry takes concerted measures to remove the impediments to the efficient running of coastal shipping. The question of subsidy needs a fresh look in the context of the Government decision to limit the subsidies gradually. These have benefited only the industrial consumers and the vast masses of the rural and urban poor have not benefited from these subsidies.

Future of Coastal Shipping

Coastal shipping has potential to develop on its own where the traffic originates and terminates between ports. However, in times of transport shortages, it can supplement the internal transport system. According to the National Transport Policy Committee, future traffic offerings to the industry will increase considerably. It is estimated that 119 lakh tonnes of traffic will be available to the industry in 2000 A.D. This, therefore, calls for strengthening the industry suitably to cater to the increasing traffic requirements.

To improve its performance, the following measures are suggested.

(i) It is absolutely essential to modernise the coastal shipping fleet which at present has vessels which have outlived their economic life.

(ii) Custom procedure should be simplified to save time and cost to the industry.

(iii) Improvement of the turn-round time of vessels is another aspect which requires immediate attention.

(iv) The freight rates have not been revised since 1975 and have become unrealistic in the context of high escalation in the cost of operation. It is necessary to devise a system to revise the rates expeditiously so that the industry does not suffer unnecessarily.

Even if the above measures are adopted by the Government, there is no guarantee that coastal shipping will work viably. It is necessary to have the cooperation of the different agencies involved in coastal trade to sustain coastal shipping in the long run. The task of coordination can perhaps be facilitated by suitably organising the Industry, preferably by setting up a corporation to look after the coastal trade of India. □

Deposit Mobilisation in Banks -A Survey

There has been a four-fold increase in the number of bank branches after nationalisation

O R. Krishnaswami and C. Sreenivas*

IN recent years, to play an active role in the economic development of the country, commercial banks in India have introduced several new schemes for mobilising more deposits. Here is a report based on a survey. The deposit mobilisation techniques and strategies, and trends in the growth of deposits of all scheduled Commercial Banks in India was made by sending a questionnaire to 59 banks out of which 12 banks responded.

For an in-depth study, one public sector bank and one private sector bank were selected. Two branches of each bank, one located in a commercial area and another in a residential area were chosen for branch level study. Data were collected from the head offices of the selected banks and also from the selected branches. A sample of depositors (3 or 4 in each scheme) covering almost all types of deposit schemes was drawn from each selected branch. Out of the total of 96 depositors to whom copies of a structured schedule were distributed, 48 completed and returned.

Main Findings

Trends in the Growth of Deposits.—In the post-nationalisation era deposits have increased. The causes for such unprecedented growth are :

(a) Money supply increased from Rs. 6,387 crores in 1969 to Rs. 19,378 crores in 1977 registering an increase of 303 per cent. Simultaneously, bank deposits also rose from Rs. 5,028 crores in 1969 to Rs. 22,932 crores in 1977, an increase of 456 per cent.

(b) There was a rising trend amongst individual (Household sector) to invest in banks. From 36 pe cent in 1969-70 the investment increased to 53 pe cent in 1974-75 of the savings of the household sector It clearly reveals the increase in popularity of banl deposits among people.

(c) The role of Branch expansion as a means o deposit growth needs no emphasis. The fact that th average population per branch came down from 65,000 in 1969 to 20,000 in 1977, shows how bank have been expanding their activities in recent times From a total of 8,262 branches in 1969 the numbe of branches of commercial banks shot up to an al time high figure of 27,943 by the end of June 1978 registering an increase of 338 per cent. The correla tion test shows that there is a very high degree o positive correlation between the growth of deposit in banks and the expansion of branches.

Growth of Deposits

The growth of deposits of the two selected Bank was satisfactory. The deposits of the public secto bank rose from Rs. 185 crores in 1969 to Rs. 1,08 crores in 1977, registering an increase of 586 pe cent. The deposits of the private sector bank on th other hand rose from Rs. 19 crores in 1969 to Rs. 26 crores in 1977, an increase of 1,368 per cent.

Even according to the Statistical trend analysi actual deposits recorded an increase of Rs. 170 crore in the case of the public sector bank and Rs. 26 crore in the case of the private sector bank, over the ex pected trend, indicating record increase in deposit

The growth of deposits of the selected branches wa also satisfactory. The deposits of the residential are branch of the public sector bank recorded an increa

*Commerce Professor and M. Phil Scholar, respectively in Bangalore University.

of deposits from Rs. 1,363 thousand in 1970 to Rs. 13,207 thousand in 1977, an increase of 970 per cent (in seven years). The deposits of the residential area branch of the private sector bank, on the other hand, rose from Rs. 3,698 thousand in 1972 Rs. 9,053 thousand in 1977, registering an increase of 808 per cent (in five years). However, it must be mentioned that both banks found it difficult to meet the expectations of their Performance Budgets.

The deposits in the commercial area branches, of the public sector bank rose from Rs. 22,425 thousand in 1969 to Rs. 43,628 thousand in 1977, an increase of about 200 per cent (over eight years) : while the deposits of the corresponding branch of the private sector bank increased from Rs. 347 thousand in 1972 to Rs. 26,347 thousand by 1977, registering an increase of 7,593 per cent (over five years).

Savings and fixed deposits were the most popular in residential areas. Money multiplication type deposits, in the case of the public sector bank and Cash Certificates in the case of the private sector bank were also very popular indicating the attitude of the people to save and invest more in term deposits.

to have savings and fixed deposits followed by recurring deposits, (in residential areas) and savings bank accounts followed by fixed and current deposits, (in commercial areas). Though the new deposit schemes introduced in recent years were not very popular, at least in comparison with the above mentioned, a few of them such as money multiplication type deposit scheme in case of the public sector bank and the Cash certificates of the private sector bank were popular to some extent.

A majority of the depositors were aware of the facilities available in non-banking financial institutions to deposit and earn higher rates of interest. Some of them actually had deposited with them but they agreed that there is an element of risk.

Suggestions

In the light of the above findings, a few suggestions for increasing deposit mobilisation are made :—

Instead of each bank devising its own deposit schemes, it would be more useful in the larger interests of the economy if all the banks could pool their expertise and genius and decide upon suitable schemes, which would help mobilise deposits on an increasing scale

Banks today employ a wide variety of techniques to mobilise deposits. They formulate and implement schemes suitable to the customers. The new scheme cater largely to the financial and investment needs of the rural people.

In the case of branches located in commercial areas, savings and fixed deposits were very popular, followed by current deposits. The money multiplication type fixed deposits and the cash certificates were very popular in these areas too.

Techniques of deposit Mobilisation

Banks today employ a wide variety of techniques to mobilise deposits. They formulate and implement different schemes suitable to the customers. A wide variety of schemes have and are being introduced to motivate people to invest in banks. The new schemes cater largely to the financial and investment needs of the people of small earning and living in rural areas. It is for this, that many schemes are named in the local or regional language, so as to facilitate its easy understanding.

Another factor is the publicity given through mass media. House to house campaigns and sometimes personal communication with customers were also undertaken.

Certain other techniques are also adopted. They include, 'savings weeks' or 'deposit weeks' celebrations, and adoption of banking linings suited to the convenience of the customers and convenient location, etc. Majority of the depositors susveyed reported that they were never informed by anybody in the branch about new schemes introduced and obviously therefore, knew nothing about them. This was one very crucial lacuna noticed at the level of the Branch.

Customers Preference

Most of the depositors selected a particular branch mainly because of the nearness to their office or residence and few for their suitable timings. But only in a few cases did people select branches on account of their efficient service. Most of the depositors prefer

Further, before introducing a new scheme, it is desirable first to try it in a few selected branches and in the light of the experience the question of extending it to other places or otherwise may be decided.

Branch Expansion is being extensively used as a tool for deposit mobilisation especially in rural areas. Massive rural branch expansion calls for a detailed cost-benefit study, lest branches should become non-viable. Periodic review of budgets on the basis of actual deposits mobilised is absolutely essential.

An effective Deposit Information System should be devised to make the people aware of what the bank has to offer. At the level of the branch a Public Relations Officer/Assistant may be posted, with duties such as distribution of information brochures about the Bank's new schemes to the customers explaining to them the scope and suitability of the different schemes, clarifying their queries, etc.

The role of the Branch Manager and staff in customer motivation is extremely important. Branches could periodically arrange 'about ourselves weeks' wherein information is provided to customers about bank services and schemes.

The growing deterioration of customer service in Banks has been causing increasing concern to bankers all over the country. Steps to improve customer service have already been initiated in terms of action, on the basis of the Final report of the Working Group on Customer Service in Banks.

It is imperative for banks to remember the psychological importance in customer service. No effort should be spared in improving it. The implementation of the recommendations of the working group on customer service in Banks may be reviewed and appropriate corrective steps taken, in the light of such

Debt Position Of States In India

G. Chandra Sekar Rao*

and

Dr. G. Raghava Reddy*

THE structure of federal finance in India has been established in the very constitution of the country. The scheme of division of resources has made a clear demarcation of taxes to be levied by the Union and State Governments. The States obtain resources from the Central Government in a variety of ways. They share with the Centre the excise duties and income-tax and get a grant in lieu of the tax on railway passenger fares. The net proceeds of the additional excise duties go fully to the States. They also get revenue grants from the Centre on the recommendations of the Finance Commission. But all this still leaves a large gap as far as Plan schemes are concerned. The States have also found it difficult to maintain their capital assets and meet the requirements of various relief measures against floods, droughts and diseases.

Borrowing Status

The Constitution of India empowers both the Central and State Governments to borrow either independently or collectively. The proceeds of the total borrowings are to be shared by the Central as well as State Governments in the case of centralised borrowing. In 1963, in the wake of Chinese aggression, it was decided to centralise public borrowing and it was proposed to borrow Rs. 393 crores and distribute a part of it among the States. However, since the scheme could achieve only a limited success even in a period of war, it was decided to go back to the old scheme of separate borrowing by the Central Government and State Governments. The States have a subordinate position in respect of borrowing. They cannot raise loans outside the territory of the country. States, generally do not have complete freedom to float new loans without prior consent of the Union Government in a federal set-up. This aims at preventing unsound borrowing and safeguarding the credit structure of the States. The Reserve Bank as the Manager of debt of both Centre and States, coordinates the debt policies of the Centre and the States for maintaining a stable economic order in the country.

Size of Debt

The outstanding debt liabilities of the State Governments stood at Rs. 16,334 crores at the end of March, 1978 showing an increase of Rs. 1,635 crores (11.1 per cent) during 1977-78 as against an increase of Rs. 1,118 crores (8.2 per cent) during the previous year. The debt liabilities are expected to rise further on account of the inertia of the State governments to mobilise resources on their own and the exigencies of planning.

Composition of States' Debt

States' debt consists of loans and advances from the Central Government, market loans, Provident Fund etc. During 1951-79 the total debt of the States increased by about 50 times and the loans from the Centre increased by 68 times.

It is evident from Table-I that States largely depend upon the Centre for their loans. This dependence is increasing during the Plan period. Loans from the Centre to the States constituted 52.2 per cent in 1951 and 74 per cent in 1974. This state of dependence erodes the autonomy of the States to formulate their plans effectively on the one hand and implement them effectively on the other. Diversification of State debt might strengthen the hands of the States in planning for their development. This question needs to be tackled in the overall context of the evolution of sound Centre-State financial relations to suit the needs of a developing economy.

In absolute terms repayment of loans increased from Rs. 72.1 crores in the First Plan to Rs. 3666.8 crores during the Fourth Plan. The level of repayment of debt to the Centre has shown a steady increase over plan period from 6.8 per cent in First Plan to 15.4 per cent in the Second Plan, 21.6 per cent in the Third Plan, 28.9 per cent in the annual plans and 34.7 per cent in the Fouth Plan. However, there was a steep fall in the level of repayment relating to year 1977-78. Though there is an increase in the level of repayment, the dependence of the States on the Centre for loan finances continues to mount as is evident from Tables I and II.

Debt Relief and Redemption

The ever-increasing dependence of the States on the Centre has become a major financial problem to both centre and States. Successive Finance Commissions have dealt with the problem of debt and tried to evolve a modus vivendi for rationalising debt repayment. The Third Finance Commission for example noted the gravity of the situation and recommended an analysis and review of the situation. The Fourth Finance Commission felt that instead of a uniform

**Faculty of Economics, S.V.U.P.G. Extension Centre Kavali, Nellore District, A.P.*

TABLE I

Debt Position of the States as on 31st March, 1979

(Rupees in crores)

Particulars	1951	1956	1961	1966	1967	1974	1979 (estimates)
Internal loan	123	267	592	1,178	1,489	2,155	3,348
Loans from Centre . . .	196	943	2014	4,103	5,569	8,578	13,463
Provident Fund etc. . . .	56	86	133	231	367	857	1,974
To tal	375	1296	2739	5,512	7,425	11,590	18,785

TABLE II

DEBT REPAYMENT

Debt Repayment of the States to the Centre (plan-wise)

(Rs. in crores)

	First Plan	Second Plan	Third Plan	Annual Plans	Fourth Plan	1977-78
1. Loans from the Centre	769.5	1417.0	3091.7	3039.9	6769.2	1522.3
2. Repayment of loans to the Centre .	72.1	365.2	1014.2	1217.3	3666.6	621.0
3. Net Loans from the Centre . . .	697.4	1051.8	2077.5	1822.6	3102.6	90.13

treatment meted out to every State, a more thorough and discriminating approach was needed with regard to periods, rates of interest and other terms of each loan which the centre advanced to a State. The Fifth Finance Commission suggested that those loans which did not bring direct returns should be kept within reasonable proportion of the States in terms of their interest liabilities and accordingly all these rates were reduced with effect from 1-4-1969. The Sixth Finance Commission recommended that the existing outstanding loans should be consolidated into certain specific categories and the terms of repayment should be liberalised.

According to the estimates of Seventh Fiance Commission the total debt of the State Governments was Rs. 18,785 crores at the end of the 1978-79 of which the liability due to the Centre alone would be Rs. 13,463 crores and the market loans would be Rs. 2,572 crores. The remaining Rs. 2,750 crores consists of negotiating loans, compensation bonds, Provident Fund and other unfunded debt. The Commission estimated the unproductive loans to the tune of Rs. 943 crores among the total debt which has to be wrtiten off since it will not yield any returns. The remaining is divided as (a) semi-productive and (b) productive. Semi-productive debt has to be repaid in 30 equal instalments from the year 1979-80. The productive debt has to be repaid in 15 annual instalments. The recommendations of Seventh Finance Commission are to be explored thoroughly and implemented sincerely to relieve the States, to the extent feasible, of the burden of Central debt. In a federal set up wedded to planning with social and regional justice the financial structure between the different layers is to be equitable and just rather than dominating and directing.

The loans from the Centre to the States in India have been increasing both absolutely and relatively Repayment obligations also have been mounting The Finance Commissions have suggested several measures of relief such as writing off of unproductive debt and rationalising loans and grants for both plan and non-plan outlays and charging lower rates of interest. The implementation of some of these recommendations will enable the States to undertake their efforts at financial mobilisation with a sense of certainty and make multi-level planning a meaningful proposition.

The outstanding debt liabilities of the State Governments stood at Rs. 16,334 *crores at the end of March,* 1978 *showing an increase of Rs.* 1635 crores (11.1 *per cent*) *During* 1977-78 *as against an increase of Rs.* 1,118 *crores* (8.2 *per cent*) *during the previous year*

Foreign Aid in India—An Economic Analysis

Dr. Shyam Nath Nandkeoliyar *

THE most important factor for development is capital, which has always played a significant part in boosting up the economy from primitive stage of development to high mass consumption.

History depicts the fact that foreign aid has helped in achieving a higher rate of growth of present day developed countries. India, too, since the inception of the Plan in April 1951, has augmented her developmental programmes relying upon foreign assistance. It has helped India in increasing her income and product in spite of the fact that the utilisation of aid is slow. It may be particularly due to undeveloped and unutilised resources which formed the inability for full absorption. The following figures will show the quantum of authorised assistance which includes loans, grants and PL 480/665 assistance and its utilisation during the course of planning.

The above figures show that while India had bee capable of utilising only 78.8 per cent of total authorise assistance upto the end of Third Plan, the ratio ha much increased upto the end of 1977-78. In othe words, from First Plan to 1977-78, the total aid utilise by India was Rs. 17963.9 crores, i.e. 87.3 per cen of the total authorisations during the same period. Thi reveals that in spite of the slow rate of utilisation, Indi has been able to absorb a large share of authorise assistance.

The foreign assistance has helped India in increasing her product and development in the Public Sector. Public Sector, for underdeveloped countries like India, is the only sector which can bring overall development in the economy. Private sector too is the contributory factor for development but in a poor country like India where saving is a problem to masses, erection of private industries is difficult. Thus, in developing public sector, as vital sector, as a vital impetus towards prosperity, external impetus towards prosperity external resources have played a major role.

TABLE : I

Overall External Assistance

(Rs. crores)

Period upto the end of Third Plan	Authorisations	Utilisations
	5711.6	4508.8
1966-67 . .	1506.5	1131.4
1967-68 . .	1718.9	1195.6
1968-69 . .	946.8	902.6
1969-70 . .	634.3	856.3
1970-71 . .	761.9	791.4
1971-72 . .	929.2	834.1
1972-73 . .	676.2	666.2
1973-74 . .	1170.6	1035.7
1974-75 . .	1671.2	1314.3
1975-76 . .	2653.5	1840.5
1976-77 . .	1286.4	1598.9
1977-78 . .	1897.0	1288.1
Total . .	20564.0	17963.9

*Lecturer in Economics R.R.S. College, Mokameh (Patna)

The external resources in the Third Plan have been 28.2 per cent of the total resources, while it was only 22.5 per cent in the Second Plan and about 9 per cent in the First Plan. It again increased to 35.9 per cent in Annual Plans. However, in the Fourth Plan, due to government's effort for increasing domestic resources and less reliance upon foreign resources (aid), the external resources could finance only 15.3 per cent. In the rest of the periods, the average contribution of external resources was more than 16 per cent.

The necessity of aid in India even after thirty years of planning poses a challenge to its planners. India should now be in a position of a net lender than a borrower. The costs of such aid are so high that a part of our best capital and resources are used for the payment of amortisation and interest. The payment of only interest has increased from Rs. 13.5 crores in the First Plan to Rs. 260.1 crores in 1977-78 and is expected to increase to Rs. 290.6 crores in 1978-79.

The determining factors in the long run of debt servicing capacity are the rate of increase in the national income, savings, total tax revenue of the government and in the short, export earnings.

Debt Servicing Capacity and National Income

The following figures will show the percentage of national income absorbed by debt payment.

TABLE : 2

Debt Servicing and National Income*

(In crores)

Year	National Income (at Current Prices)	External Debt Services	External debt services as percentage to National Income
1970-71 . .	34368	450.0	1.3
1971-72 . .	36745	479.3	1.3
1972-73 . .	40422	507.4	1.2
1973-74 . .	50665	595.8	1.2
1974-75 . .	59315	626.0	1.1
1975-76 . .	61609	686.9	1.1
1976-77 . .	66561	754.7	1.1
1977-78* . .	73157	820.8	1.1

*Quick Estimates.

Saving is of strategic importance for an underdeveloped country like India. The greater will be the saving, the greater wil be the investment and the higher will be the growth potentialities. In India, the growth rate of domestic savings has been 12.0 per cent in 1970-71 which decreased to 11.2 per cent in 1972-73 but increased to 13.8 per cent in 1973-74 ; 14.6 per cent in 1974-75 ; 16.0 per cent in 1975-76 and 18.7 per cent in 1976-77.

A large part of saving is absorbed in debt repayment; thus, it results in low availability of capital formation in the country. In other words, our capacity to repay the debt in terms of saving is not high and if it continues, the growth of the economy will have to suffer.

Export Earnings

The burden of debt servicing in the short run heavily concentrates upon the export earnings of the country. If a large proportion or export earnings is used for the payment or debts, it means, that a large portion of the factor contributory to economic development has been exploited. Foreign exchange is itself the powerful apparatus for an underdeveloped country like India in boosting up the economy. The faster the rate of foreign exchange growth which is mainly and largely due to export earnings, the rapid is the development ; and self-sufficiency comes to the country. Export as such has inspired the growth of USA, Sweden, Switzerland, Japan etc. It has been a powerful engine for growth in the nineteenth century and a stimulating factor for development in the twentieth century. Now if the volume of foreign exchange is invested in meeting the debts, it reflects severe strain upon the economy in the way of prosperity. In India, whereas on the one hand the growth of export earnings is not satisfactory, on the other hand, a large portion of debt is paid out of this slow and unsatisfactory export earnings. The total export in 1965-66 was to the tune of Rs. 1268.9 crores which increased in 1969-70 only to Rs. 1413.3 crores. It is in the recent years that export earnings have increased to some good extent. This increase in export earnings is due to high international prices of some commodities like sugar, coffee etc. , and increase in export of commodities like tea, leather and leather manufactures, iron ore, iron and steel, chemicals and allied products, handicrafts etc. In 1977-78, the growth of export however marked no extraordinary improvement and rate of growth came to 4.5 per cent.

The capacity to repay debt in proportion to export earnings is not high in India. In the later years, the percentage has decreased to some extent in comparison to earlier years because the debt payment has not increased in proportion to increase in export earnings. But still those parts of export earnings, which go in meeting debts is enough to shatter the stability of Indian economy and inhibits the faster growth to attain self-sufficiency.

Under the circumstances, it seems not an intelligible step to seek aid and thereby development. The aid has contributed marginally to the development of India. The idea of assistance should no more be acclaimed and planners need to advocate certain other suitable measures and policies for a healthy balance of payments and growth. Such policies and measures should not be outlined once for Plan periods but should be made every year, evaluated six-monthly and implemented strictly. An extensive research in this respect should be facilitated which will provide possibilities of success of these policies and measures

An expansion of trade is the most suitable measure for India in this respect. The trade definitely entails a healthier growth of the economy. The export promotion devices should be given due emphasis and government should be cautious of massive mobilisation of domestic resources. This needs a close attention and co-ordination between the Centre and States. If they concentrate themselves on enlarging the export possibilities and import substitution and not on aid for development, there are possibilities of growth through trade.

It is not only the coordination between the Centre and States which is required for the augmentation of resource mobilisation but to generate a sense of feeling in the general masses that aid inhibits the smooth growth of the country and trade stimulates the growth. Because, the high domestic consumptions have very often been obstructive factors in export earnings as can be found in the cases of tea, onion, mango, sugar, potato etc. The increasing domestic consumptions of these can be easily avoided if the importance of export for development is sensibly realised by the people. □

Enrolment of Scheduled Castes in Educational Institutions

R. N. [illegible]*

IN consonance of the spirit of our Constitution various programmes were included in the Five Year Plans for the overall development of the backward classes. The progress made during the last 30 years in the field of educating them is no doubt impressive but the magnitude of the problem is so great that it is still a long way to go if the constitutional goal is to be achieved.

Pre-primary Stage

During the period 1960-61 to 1975-76 the enrolments of Scheduled Castes rose from 0.06 lakhs in 1960-61 to 0.28 lakhs in 1975-76 showing an overall growth rate of 10.8 per cent. The growth rate of Scheduled Castes enrolments remained higher than the total enrolments all through showing a constant improvement in their percentage to total enrolments which rose from 4.9 in 1960-61 to 7.5 in 1975 resulting in a constant increase in the extent of coverage also which went up to 49.6 in 1975-76 against 33.7 in 1960-61.

On the basis of regression equation obtained it is calculated that it would take 32 years for Scheduled Castes to come at par with the rest of the population in pre-primary schools.

Primary/Junior Basic Schools

The enrolment of Scheduled Castes more than doubled from 31.97 lakhs in 1960-61 to 64.04 lakhs in 1975-76. The percentage of enrolment of scheduled castes to total enrolments, also increased from 12 per cent in 1960-61 to 13.7 per cent in 1975-76. In 1965-66 and 1970-71 these remained at 12.9 per cent. It was because the growth rate in the enrolment of Scheduled Castes during 1965-66 to 1970-71 was similar to that of total enrolments. The overall growth rate during the fifteen years period was 4.7 per cent in case of Scheduled Castes against 3.8 per cent in case of total enrolments. The extent of coverage also moved up from 81.6 in 1960-61, 88.4 in 1965-66 and remained the same in 1970-71 also. It slightly rose to 91 in 1975-76.

The results arrived at by analysing the data indicate that it would take about 18 years for the Scheduled Castes to come at par with the rest of the population in these institutions if the present trends continue.

Middle/Senior Basic Schools

The enrolments rose from 9.20 lakhs in 1960-61 to 23.73 lakhs in 1975-76 showing an overall growth rate of 6.3 per cent during this period. Though it was higher than the growth rate in total enrolments it fluctuated from 11.4 per cent during 1960-61 to 1965-66, 3.2 per cent during 1965-66 to 1970-71 and 5.1 per cent during 1970-71 to 1975-76.

The percentage of enrolments of Scheduled Castes to total enrolments also fluctuated between 8.7 per cent in 1960-61 to 10.0 per cent during 1975-76 resulting in variations in the extent of coverage during different years. While it was 59.2 in 1960-61, it rose to 64.4 in 1965-66 and declined to 63.0 in 1970-71 and slightly increased to 66.5 in the year 1975-76.

In case of Middle/Senior Basic Schools the value of R^2 obtained was 2974. No results could be derived about the probable time for Schedule Castes to come at par with the rest of the population.

High/Higher Secondary Schools

The enrolments of Scheduled Castes rose from 5.33 lakhs in 1960-61 to 9.57 lakhs in 1965-66 showing the annual growth rate of 12.4 per cent. These further rose to 12.88 lakhs in 1970-71 showing a growth rate of 6.1 per cent and to 17.02 lakhs in 1975-76 showing a growth rate of 5.7 per cent.

On the basic of regression equation obtained, it is calculated that it would take 32 years for the Scheduled Castes to come at par with the rest of the population is pre-primary Schools.

It may be observed that the growth rate of enrolments of Scheduled Castes all through remained higher than the growth rate in case of total enrolments and the overall growth rate of 8.0 per cent in case of Scheduled Castes enrolment during the 15-year period was also fairly higher than the growth rate of 6.5 per cent in case of total enrolments. As a result of this the percentage of enrolments of scheduled castes to total enrolments increased from 7.1 per cent in 1960-61 to 7.7, 8.0 and 8.9 per cent in the years 1965-66, 1970-71 and 1975-76 respectively resulting in a continuous increase in the extent of coverage from 48.3 in 1960-61 to 52.7 in 1965-66, 54.8 in 1970-71 and 59.1 in 1975-76.

In case of these institutions it is estimated that it would take about 54 years for the Scheduled Castes to come at par with the rest of the population.

Vocational Education

From the available combined figures it appears that both in case of total enrolments and enrolments of Scheduled Castes there is no definite trend. The enrolments first rose and then declined and then again slowly picked up. There are a number of factors responsible for these trends in the enrolments. However, one thing is apparent that the percentage of enrolments of Scheduled Castes to total enrolments which was 11.8 in 1960-61 came down to 5.5 in 1970-71 but slightly picked up to 8.3 per cent in 1975-76 resulting in a slight improvement in the extent of coverage also from 37.7 in 1970-71 to 55.1 in 1975-76.

*Senior Research Officer, Planning Commission

As in case of middle and senior basic schools, the value of R^2 in these institutions obtained is only .2041. Thus no probable time for Scheduled Castes to reach the level of others in these institutions can be derived.

Colleges for General Education and Universities

The enrolments in colleges for general education and universities have shown a constant increase both in case of total enrolments and enrolments of Scheduled Castes. The total enrolments increased from 7.68 lakhs in 1960-61 to 33.32 lakhs in 1975-76 showing an overall annual growth rate of 10.3 per cent. The growth rate was, however, not even and varied from 14.3 to 6.5 per cent during different periods.

The enrolments of Scheduled Castes also increased from 0.39 lakhs in 1960-61 to 2.35 lakhs in 1975-76 showing an overall annual growth rate of 12.7 per cent. In their case also the growth rate varied during different periods. Their growth rate which was lower than the total enrolments during the period from 1960-61 to 1965-66, became higher than total enrolments during subsequent periods. The percentage of enrolments of Scheduled Castes to total enrolments which was 5.1 per cent of the total enrolments in 1960-61 declined to 4.6 per cent in 1965-66 but rose to 5.4 per cent in 1970-71 and to 7.1 per cent during 1975-76. The extent of coverage which was 34.7 in 1960-61 first came down to 31.5 in 1965-66 and then rose to 37.0 in 1970-71 and to 47.2 in 1975-76.

It is estimated that it would take about 29 years for Scheduled Castes to come at par with the rest of the population in the country in respect of colleges for general education and universities.

Enrolment in all Institutions

In case of Scheduled Castes the enrolments in all educational institutions more than doubled from 49.67 lakhs in 1960-61 to 109.06 lakhs in 1975-76. It is, however, worth noticing that overall growth rate in case of enrolments of scheduled castes during 15-year period was higher than the total enrolments and so was during 1960-61 to 1965-66 and 1970-71 to 1975-76 but during the period of 1965-66 to 1970-71, it was significantly lower than the total enrolments. As a result their percentage to total enrolments first rose from 10.4 in 1960-61 to 10.9 in 1965-66 and then declined to 10.6 in 1970-71 and thereafter rose to 11.5. The extent of coverage also, therefore, kept on fluctuating. While it was 70.7 during 1960-61, it rose to 74.7 in 1965-66. During 1970-71 it declined to 72.6 and then again rose to 76.4 in 1975-76.

As in case of Middle and Senior Basic Schools and Schools and Colleges for vocational education, etc., the regression analysis of the extent of coverage of all educational institutions did not give any significant results as the value of R^2, obtained was only .0816. Thus no results could be derived from the analysis about the probable time when these people will come on par with others.

The analysis of the enrolments in the foregoing paragraphs has shown that the growth rate of enrolments in case of Scheduled Castes has not been significantly different from the growth rate in total enrolments in various types of institutions during the fifteen years of 1960-61 to 1975-76. Though, in most of cases, the growth rate in their case was higher than that of the total yet in some cases their growth rate was lower than the total.

Analysis of the extent of coverage does not give any indication that the Scheduled Castes will be at par with the rest of the population in any type of institutions in the immediate future. It is likely to take from 18 to 54 years in different type of institutions for them to reach the level of others.

U.N. Decade for Women.........

(*Contd from page 8*)

vention legally bounds internationally accepted principles and ways to achieve equal rights for women everywhere. It calls for national legislation to ban discrimination and to change cultural and social patterns that perpetuate discrimination. The leader of the Indian Delegation to Coopen-hagen while signing made it clear that Article 30 of the Charter, which made marriage registration compulsory, was agreed to in principle but was very difficult to be implemented in India as it had varied religions. People lived in remote villages where there were no means for registration.

The stand taken by India on some of the vital issues discussed by the Conference, especially the conditions of the Palestinian women refugees, was supported by majority of the countries of the Third World and several other countries. As the aim of the Conference was peace, development and equality, India felt that every women of the world—Palestine, South Africa, Indonesia or Vietnam—should have equal right to these principles.

Improving the lot of Women

Besides, the U.N. Conference for Women at Coopen-Hagen at Bella Centre, another Women's Conference of non-governmental organisation was being held simultaneously. There were also women delegations from all parts of the world taking interest in their deliberations and keen to know what was going on at Bella Centre. At their request to be heard at the United Nations Conference, time was allotted to them towards the end.

The review of the work that was done during the last five years would help in understanding the problems and removing the obstacles while implementing the programme for improving the lot of women. The new programme that has emerged out based on this experience would help the members to chalk out programmes, directly relevant to women. The opportunity that was given by this Conference of sharing experiences should help in better understanding of the problems of the women and of their possible solutions.

There are another five years to go for the completion of the Women's Decade. If we get decided, as we have, there is no reason to doubt that better future lies for the women of the world and also the world would benefit by utilizing the wasted energy of its half of the population. □

Fisheries in India

M. K. Mukundan

and

G.K. Kuriyan*

A tank in Raipur built under Fisheries Development Programme, M. P. Community Project

MARINE products spin foreign exchange and enable us achieve self-sufficiency in food. Also the problem of protein deficiency in Indian diet can be solved. Our efforts to raise inland and brackish water acquaculture are impressive. The CIFRI, Barrackpore and the CMFRI, Cochin have done some commendable research and development work in this regard. Even though here and there, some attempts are made to culture mussels, oysters and sea weed, the Indian mariculture is still in its infancy.

When we analyse the multipronged approaches organised and executed by some of the developing and developed nations, we can know still how primitive we are in the field of organised fishery.

Krill

Krill, a shrimp like planktonic crustacian, is an important source of protein and the nations are competing with each other to exploit this resource. The FAO has estimated the krill resource to be around 100 million tonnes and that there can be a maximum sustainable catch of 50 million tonnes per year. Many nations have already started sharing this treasure. Japan alone is landing 30,000 tonnes per annum.

Japan has developed machines and devices to filter krill from sea, peel it alive, transport to land in frozen condition and extract the protein. The protein so obtained is used to enrich rice crackers and biscuits. A part of the peeled meat is fried and consumed as such.

Deep sea Fishing

Another area, almost totally untapped, is deep sea fish, living on the sea mountains beneath the water. Fishing in 200 miles zone is an uneconomic affair and hence the need to think of deep sea fishing. There is no technology to draw a net at a depth of 500 to 1000 metres along the slope of a sea mountain. Taking various obstacles into account the fishing nations are trying to develop cage net fishery for deep sea operations. The idea is to lower horizontally a rope having many cages with baits to attract fish and keep them on the ocean floor for 24 to 48 hours. Development of cage nets for each type of fish on these lines will definitely improve the deep sea fish landing.

Marine microflora

A third important and virgin marine resource is the wide variety of marine microflora. There are many reports that marine micro-organisms are better producers of proteolytic, lipolytic and carbohydrate splitting enzymes. A proper study of the enzymes of the marine micro-organisms can provide excellent substitutes for plants and animals as enzyme source, which will be more economic and viable as, unlike plants and animals, they require only very small area for cultivation and the production will be free from the clutches of climate.

*Scientist, Biochemistry Division of the Central Institute of Fisheries Technology, Cochin and Director of the Institute, respectively.

Japanese Techniques

The novel and pragmatic mariculture techniques developed by Japan are worth mentioning. The fish in marine waters are mainly of two types. The first type include all those fish which return to the place of birth after swimming the seas. The Japanese have developed breeding as well as culture techniques for mariculture of more than 20 species of fish comprising Lobster, Salmon, Yellow tail, Eel, Red sea bream, Sea Weed, Wreath shell, Abalone, Octopus, etc.

However, there are many varieties of fish which do not return to the place of origin. That is to say once we breed and release, we cannot expect them to come back. The Japanese study of breeding and culturing of Tuna will exemplify this. The waters around Sicily Islands in Mediterranean Sea are one of the best spawning grounds of bluefin tuna, the most relished tuna all over the world. They catch the adult tuna in spawning season and allow them to spawn in laboratory. The spawn after mixing with sperm (fertilization) are transported by air to Tokyo laboratory where they are put in aquarium tanks to be raised according to certain rules. When they grow up to 50 cm. in length they are released into the sea.

In another method the fertilised spawns are taken care at Sicily itself where, when they grow upto 20 cm. they will be put in open sea surrounded by nets. As they reach 50 cm in size they are released in to the sea. Japanese fishery experts are on the verge of a breakthrough. The Japanese Ministry of Agriculture, Forestry and Fisheries is taking the leading part in a project to make artificial fish gathering places under the sea at a depth of 20 to 60 metres at a cost of 10 million yen. The project envisages to build artificial sea mountains of concrete in coastal waters. This process, popularly known as "Sea Control" is aimed at improving fish population of coastal waters. The success of this method also lies in prevention of sea water pollution and cleaning of sea bottom to provide comfortable living places for fish.

In India

The Central Institute of Fisheries Technology can play an important role in optimising fish utilization and developing various foods from fish especially the cheap and less utilised species of fish. There will be increased need for eating deep sea fish, which we have not done so far. The present habit of throwing away head, tail and intestine must change. There are already methods for profitable use of fish waste. Hence it is high time that there should be a waste collection centre at fish landing sites to collect head, tail, intestines etc. before the fish is sold. They can be then converted into fish paste or ensilage, to feed cattle, poultry or fish. More economic methods of preservation and transportation should be adopted. The development of suitable pouches and methods of vacuum packing are promising avenues to be tried as cheaper ways of fish preservation. In the matter of distribution too, it is advisable to have a centralised network through out the country between, markets, cold storages and landing centres. In India, especially for Fisheries Research and Development, more importance is given to adaptive research. This will only make us tail enders and we can never achieve any breakthrough. For progress and development original basic and applied research are very important and should go alongwith adaptive research. Then only we can imbibe the present and prescribe a future. Talent is rich in India, and resource too. If there is will, finance and encouragement, development is not difficult. □

Energy of Wind : Reality and Prospects

Leonid Staroselsky*

Experts are vigorously searching for new sources of energy. The use of mineral energy resources in the furnaces of thermal power stations sharply raises the pollution of air with carbon monoxide, sulphurous gases and soot. These also consume oxygen in large quantities. In this background energy derived from wind assumes great importance. More so for developing countries like India in the hot zone with long coast line. The energy of the wind, which is absolutely harmless for the environment, is one of real alternatives.

The world's first wind-driven power station with a capacity of 8 kilowatts was built in Kursk of the Soviet Union in 1930. Today, experimental wind-operated power stations with a capacity of 100 to 200 kilowatts already operate in some regions of the USSR and in some other countries. But they cannot operate at high speeds of the wind. The station must be stopped if the speed of the wind crosses 20 metres per second since its impeller may go out of order. So, both calm and squall are undesirable.

The way out was suggested by Vladimir Sidorov, Chief Designer of the Tsiklon (Cyclone) research-industrial association, a USSR State Prize Winner. He has designed an installation capable of withstanding any speed of the wind and hence yielding maximum energy. Instead of one impeller the unit has eight rotors on which the whole load is distributed uniformly. The design capacity of Sidorov's installation is 40,000 kilowatts of electric power per hour, which is tantamount to the capacity of a modern thermal power station.

The design also takes into account the possibility of a calm. Sidorov has designed a wind-hydrogen installation which, in parallel with the generation of energy, will carry out the electrolysis of water, obtaining low-cost hydrogen. If it is calm, energy will be generated by a thermal generator working on the hydrogen fuel, obtained here and kept in gas holders for the time being. The device, to be commissioned in a year-and-a-half or two, is expected to generate annually over 100 million kilowatt-hours of electric power.

Soviet scientists are of the opinion that the energy problem cannot be radically solved with the aid of wind, but wind-power engineering can make a considerable contribution to the solution of this problem, and in some areas of the world it may become the leading source of energy.

* APN Science Observer.

Income and Employment in Different Sectors of Economy

K. S. Gill and P. K. Dhillon*

DIFFERENT sectors of the national economy provide employment to the inhabitants of the country. The earnings of the people would depend upon the contribution of the sector toward net national product and extent of the population engaged therein. According to the accepted classification there are three sectors of the economy viz. Primary sector (including agriculture, livestock, forestry and logging, fishing and mining, quarrying), Secondary sector (manufacturing, construction, electricity, gas and water supply) and Tertiary sector (including transportation, communication and storage, trade, hotels and restaurants, banking and insurance, real estate and ownership dwellings, public administration and other services.).

In a democratic set-up every sector is allowed to develop freely but those sectors which would have favourable terms of trade would be benefitted by the developing policies and financial allocations and vice versa. Accordingly better developed sectors generating larger net national products but employing lesser population would help its dependents to avail better facilities of life. On the other hand poorly developed sectors would generate meagre incomes hardly sufficient to meet the necessities of life.

In this article an attempt has been made to examine the extent of employment generated by various sectors of the economy and their share in Gross National Product. The data for this purpose have been used from secondary sources published by the Government from time to time.

The percentage of workers employed in various sectors is compared in Table 1.

TABLE 1

Distribution of workers in various sectors in India (percentage)

Sector	1951	1961	1971
Primary . .	72.1	72.3	72.1
Secondary . .	10.6	11.7	11.2
Tertiary . .	17.3	16.0	16.7

The percentage of workers engaged in various sectors remained almost the same. The primary sector employed 72 per cent of the total working population and the other two sectors employed only 28 per cent of the workers.

* Department of Economics and Sociology, Punjab Agricultural University, Ludhiana.

Share of Different Sectors in National Income

The National income of different sectors is indicate in Table 2.

TABLE 2

National Income of different sectors

Sector	1970-71		1975-76	
	Total	%	Total	%
Primary . .	17258	49.7	27001	44.4
Secondary .	6927	20.0	13601	22.3
Tertiary . .	10511	30.3	20249	33.3
	34696	100	60851	100

The national income in 1970-71 worked out to b 50 per cent from primary sector and 20 and 30 pe cent for secondary and tertiary sectors respectivel However, by 1975-76 the national income from pri mary sector decreased to 44 per cent whereas durin the corresponding period it increased in secondary an tertiary sectors to 22 and 33 per cent respectively For better appraisal of the situation Table 3 indicate the growth rates for various sectors of the economy.

TABLE 3

Average Annual Growth Rate of National Income a Constant (*1960-61*) Price

Per cent per annun

Sector	1960-61 to 1965-66	65-66 to 68-69	68-69 to 73-74	At 1970-71 prices 1970-71 to 1976-77
Primary .	(—)0.9	4.5	2.7	0.:
Secondary .	6.9	2.9	3.7	3.(
Tertiary . .	5.6	3.9	4.4	4.:
Total . .	2.7	4.0	3.5	2.:

It can be seen that growth rate for primary sect during the period 1965-66 to 1968-69 was the highe but in the succeeding years it decreased markedl

while in the other two sectors it showed an improvement. At 1970-71 prices, for the period 1970-71 to 1976-77, the annual growth rate for primary sector worked out only 0.5 per cent while for secondary and tertiary sectors it turned out to be 3.9 and 4.5 per cent respectively. Consequently, the net national product in the primary sector moved at much slow rate compared with the other sectors of the economy.

Income Generated

The income generated by various sectors of the economy is indicated in Table 4.

TABLE 4

Per cent distribution of net state domestic product at factor cost by sectors in Punjab

at constant (1960-61) prices in percentages

Year	Primary sector	Secondary sector	Tertiary sector	Total
1960-61 . .	50.01	15.63	30.36	100
1970-71 . .	51.89	16.13	31.48	100
1976-77 . .	45.88	20.76	33.37	100

It can be seen that contribution of primary sector over period has decreased while that of other two upward. We have already examined that about 72 per cent of the population remained engaged in primary sector. So economic lot of those depending upon primary sector is relatively deteriorating through time. Those who are engaged in other sectors are better off than the workers engaged in primary sector.

The Growth rates of various sectors for the Punjab State are compared in Table 5.

TABLE 5

Average annual growth rate for various sectors in Punjab State

Per cent per annum

Sector/year	1960-61 to 1965-66	1970-71 to 1976-77
Primary . .	2.4	3.1
Secondary .	6.0	6.4
Tertiary . .	4.5	5.2
Total . .	3.6	4.2

The growth rate in primary sector declined through time after showing the highest growth rate during the period 1965-66 to 1968-69 when era of green revolution was ushered in the Punjab State. But later on the growth rate for this sector showed a downward trend. Similar trend was followed by the growth rate in other two sectors but the decline in the growth rate was of a lesser degree. This indicated that even in the Punjab State which is leading in agriculture primary sector is not able to generate as much national income (as percentage to the total) as it was generating previously. So it is feared that per capita income in this State may not improve as previously. Table 6 indicates the per capita income in the Punjab State over period.

TABLE 6

Per capita income at constant (1960-61) prices in Punjab State

Year	Per capita income in rupees	±over previous year
1960-61 . .	366	—
1970-71 . .	496	100
1976-77 . .	588	37

Per capita income in the Punjab State during the period 1965-66 to 1970-71 improved markedly. This was possible with the introduction of high yielding varieties and advancement in the farm technology. Later on the per capita income did not improve appreciably except during 1975-76 and 1976-77. As share of the primary sector in the next state domestic product is decreasing the people depending upon primary sector are sure to suffer further, because man-land ratio is decreasing through time because of faster growth of population. Table 7 indicates the cultivable area per agricultural worker through time in the Punjab State.

TABLE 7

Cultivable area per agricultural worker in Punjab

Year	Per work cultivable land (acres)
1960-61 . .	2.23
1965-66 . .	2.06
1969-70 . .	1.75

It is seen that per agricultural worker cultivable land is decreasing through time. This situation is sure to deteriorate further as land is a limiting factor and efforts to shift population from primary sector to other sectors are not excouraging.

In advanced countries the extent of population engaged in agriculture varies from 4 to 6 per cent and the remaining population is engaged in other sectors. Per capita income and population engaged in agriculture for the selected countries is indicated in Table 8.

It can be seen that the countries whose larger population is employed in agriculture have lower per capita income than those countries who engaged more people in secondary and tertiary sectors.

Conclusions

From the foregoing discussion it can be concluded that the primary sector employing about 70 per cent of the workers is generating 44 per cent of the national income. The other sectors employing small number of workers have larger share in the national income. As a result the lot of the masses dependent upon primary sectors is poorer than those dependent upon secondary and tertiary sectors of the economy. This is more perturbing when we seen the trend in the growth rate

TABLE 8

Extent of population engaged in agriculture and per capita income in selected countries

(1974)

Country	Per cent population engaged in agriculture	Per capita income in dollars
U.S.A. . .	3.7	5554
Canada . .	8.2	4751
Belgium . .	4.8	3344
Australia . .	8.1	3426
France . .	13.7	3408
Japan . .	19.6	3292
India . .	69.3	93

of the primary sector which has slowed down wh the population (in absolute terms) engaged in tl sector is swelling year after year. The facts al reveal that those countries whose larger population engaged in secondary and tertiary sectors have higl per capita income.

Suggestions

For improving the economic lot of the masses pr sure from land should be lessened by developing secoı ary and tertiary sectors of the economy. To start witl will be better if agro-based industries are establish right in the villages so that the required raw mater and the manpower is utilized from the rural are There is a great scope for setting up small industı units in the villages for those items which are in br demand for export purposes. Besides, fragmentati of land needs to be prevented in future so that large number of small marginal farms do not beco uneconomical holdings. Growth rate in populati needs to be brought down by providing attractive centives to smaller families. □

Environmental Protection Committee Report

CREATION of a full-fledged department of environment under the direct charge of the Prime Minister was one of the recommendations made by the Committee for Recommending Legislative Measure and Administrative Machinery for Ensuring Environmental Protection, which submitted its report to Prime Minister Smt. Indira Gandhi recently. Assigned a "watch dog" role, the department will bring to the attention of the Government and Parliament the causes, consequences and remedies in relation to the problems of environment.

The Committee has also recommended the setting up of a Central Land Commission to serve as a policy planning, coordinating and monitoring agency for issues concerning the health and scientific management of land resources The Committee has, also suggested the constitution of a national committee on environment planning to serve as a 'think tank' on environmental policy matters and to provide planning and advisory inputs to the proposed Department and other Central and State agencies.

Some of the other major recommendations of the Committee are : the constitution of a Cabinet Committee on Environment, and a Central agency to serve the country's vast and rich marine eco-systems

White Rot Fungus Cleans Pulp Mill Effluen

A NEW biotechnical process for the cleaning waste water in mechanical wood pulp production l been developed at the Swedish Forest products l search Laboratory (STFI) by Professor Karl-E Eriksson and Mr. Mats Ek, Lic Eng., in cooperat withh Finland's Tampella group.

In the new process the effluents are led to a ferm tation plant where a *white rot fungus, Sporotrich pulverulentum*, is made to grow on its nutritious c tent, mainly sugar and lignin. The cleaned water subsequently be recycled to the pulp process, and fungus mycelium—with a protein content of some per cent—can either be used as cattle-feed or be mi into the pulp for paper production.

With the new process, fresh water intake at pap mills could be reduced by at least 90 per cent. The of fungus mycelium in paper manufacture would crease output by about 1.5 per cent and would en similar savings of raw material. No changes in the p sical properties of the paper are foreseen.

(SIP—Newsletter From Swed

Role of Public Sector

(*Contd. from page 6*)

Given our social milieu and the egalitarian constraints within which our industrial organisation should function, the management of the primary, basic, strategic and infrastructural industries by the Public Sector is a planning imperative. The Public Sector is destined to play a dominant and expanding role in the development process. It, however, does not mean that this development of the Public Sector would be at the expense of Private Sector or without efficiency calcu Mal-functioning in the economy should be identified rectified without loss of time, specially in the domir Public Sector. The Private Sector would be allo to function and develop within the parameters set it by the planning process. The planning process to be flexible enough to accommodate the rapidly ch ing requirements of a dynamic economic envi ment. □

Prospects of the Hosiery Industry

Bibhas K. Mukhopadhyay*

THE hosiery industry is steadily gaining its place in our national economy. Apart from Bombay, Calcutta and Delhi metropolis centres, other places like Ludhiana in Punjab. Tiruppur in Tamil Nadu, Ahmedabad and Surat in Gujarat have emerged to be important locations of this industry.

The first unit of the hosiery industry was established in Bengal as far back in 1893. Thereafter the industry grew steadily. The two world wars and the period following these gave a thrust to this industry. But later many of the units suspended their working in Bengal and started the same anew in Bombay.

Hosiery unit may find place in the cottage, small scale and medium industrial sector. The latter can be established with an investment of about Rs 50 lakhs (including land and building). This could include a processing unit for dyeing and bleaching, stitching unit, finishing and packing. A SSI unit may involve around Rs. 3 lakhs, that cover knitting, stitching and finishing. 115 persons may get job in such a unit with an average income of Rs. 350 per month. If the unit is expected to cover knitting of fine quality, processing and stitching, finishing and packing, then around Rs 8 lakhs need to be invested. Finally, in the cottage sector an investment of about one lakh may offer job to ten persons.

Hosiery industry has got tremendous market both in India and abroad. Hosiery knitwears in various types and styles have been able to tilt the demand function in its favour. Textile and woven fabrics are being replaced by these in a fast way. Cream coloured velvet-soft products of Ahmedabad, for example, have fetched a good market. An equal proportionate blending of cotton and rayon has enabled the products to gain qualities like durability and absorbility etc. Again, availability of acrylic fabrics has eased the production of items like fancy shirts.

Indigenously, the industry has got both the urban and the rural market. For example, a State like Gujarat gets about 60 per cent of its total requirements of hosierywear from other Indian States. The USSR has been a traditional buyer of Indian woolen knitwear since 1962. It is heartening to note that 90 per cent of Ludhiana products are exported to that country. Under a recently signed contract the USSR will import Indian wollen knitwears and cotton hosiery to the tune of Rs. 50 crores. In the West also, there has occurred a tilt from woven to knitted garments, in the recent past.

Fabrics Knitting Machine

Fabrics Knitting Machines are also exported. Punjab is making appreciable efforts in this direction. The markets are mostly in the middle east. Hosiery fabrics knitting machines could be found for specific purposes and dimensions for woolens or cotton and for different widths of tubular fabrics.

Most of the machines are produced indigenously. Fine needle flat lock machine is indigenously manufactured for specialized stitching on folded portions of the knitted garments. Braiding and twisting machines produce tubular of flat tapes. Decorative uses of garments, elastic tapes, shoe laces etc. can be produced through the latter also. High speed, multifeeder knitting machines are there to produce high quality fabrics. Circular knitting machines are also available now. Inter lock knitting machines with IRO (i.e. positive feed wheels) can help produce much better quality of output. This costs around Rs. 20,000. This can produce in eight hours about 10 kgs. of fabrics. A small unit may thus be installed with 4 knitting machines employing about 15 persons.

Industrial Relations

Labour-management relationship has not been recently passing through a cordial phase. Tripartite agreement has not been followed by the employers in most cases. The 73-day old strike last year in West Bengal was an effect of this The minimum wage of Rs. 8.33 per working day has not been found to be satisfactory. Besides the Government directives about D.A., working hours, overtime, weekly holidays etc are to be allowed strictly if better industrial relations are to be maintained.

Suggestions

R & D needs an immediate thrust. Quality should be maintained if an ever-increasing foreign market is aimed at. Such a centre is likely to come up shortly at Gandhinagar.

A National Hosiery Training Centre should be set up. Training to the labourers would yield better fruits in many respect. Government should take the 'lead' responsibility in this direction. Already some development has taken place due to some encouragement shown by the Government. The knitwear stitching, for example, is reserved for the small scale sector, though knitted cloth may be produced at any scale The commercial banks should come up with more vigour to ensure a rapid growth of this industry. □

* Free Lance Writer.

Economical Technology for Pelletisation

THE Steel Authority of India Limited (SAIL) has successfully developed an indigenous technology for production of cold bonded pellets. The technology has been used in a low shaft blast furnace with considerable techno-economic benefits. It is not only economical but also has a special relevance to India

The conventional heat hardening process for pelletisation of iron ore superfines and concentrates requires a large amount of energy particularly in terms of fuel oil and heavy capital investment

In the cold bonding technology pellets acquire the required strength after curing the room temperature in a suitable atmosphere.

Nepal's Hydro Power Growth Potential

Navin Chandra Joshi*

PROMOTION of electrical energy is occupying an increasingly prominent position in the development programmes of many developing countries of the world. Its appeal stems from many considerations e.g., enhancement of the country's prestige and power, achievement of a higher degree of economic self-sufficiency and realisation of more favourable terms of trade. With increased emphasis on balancing the growth of different production sectors and geographical regions of the country, power development becomes only too critical an input, not just as an additional facility of infra-structure. Indeed, considering the total potentiality of hydro-electricity in Nepal, electrical energy becomes an end-product through which growth in the national and per capita income of the country will get pushed up. With a proper and adequate harnessing water resources, Nepal's economic growth must become not only self-sustained but sufficiently liable in the sphere of international trade as well.

It is necessary that in the development of hydro-electric power in Nepal, some crucial considerations must be given due attention in the scheme of things. For example, in the appraisal of demand for power, the market needs to be analysed and demand projected in realistic manner so that future demand is not only scientifically projected but also most economically met. The relevant indicators for demand projection are population, national per capital income, production activities, Plan targets and export potential The main sources of demand for power inside the country will be industry, urban households and commercial establishment, apart from small amounts consumed by public buildings, street lighting and the like. Rural consumption will remain marginal due to the low level of rural incomes and the relatively high cost of distributing power to rural dwellers in view of the typographical conditions.

The total potentiality of hydro-electricity in Nepal is 80 million kilowatts. Compared with this, the actual generation of electricity at present is much less. The installed capacity of power generated from different methods at present stands at 63,700 kilowatts. Of this, hydro-electricity accounts for 37,255 kw., diesel 22,570 kw., and thermal plants 38,875 kw. Of the various development regions of the country, the Central region receives 48,385 kw., the Eastern region 8,756 kw., the Western region about 5,385 kw., and the Far Western region 1,214 kw. In all, only about ten per cent of the Nepalese people are directly benefitting from the existing power supply.

In the Sixth Plan period (1980—85) the demand for electricity will be much higher. The Central Development Region's requirement will be about 1,56,00 mw., the Eastern Development Region's 25,600 kw., the Western Development Region's 15,600 kw., and the Far Western Development Regions' 10,700 kw. In order to meet the increased demand for electricity, the strategy is to undertake three types of projects aimed at not only meeting the domestic needs but also for exporting electricity to the neighbouring countries. Medium-size hydro-electricity projects with a capacity of 10,000 kw. to 70,000 kw. will be initiated for the Terai and the midlands. The more topographically difficult areas in the north will have power through small power projects ranging from 100 kw. to 1,000 kw.

While the medium size projects will be carried out with the help of foreign assistance and loans, the small projects will be taken up entirely by the Government of Nepal along with some smaller projects. The major projects will be export-oriented. Since they involved enormous amount of investment, assistance will be sought from foreign countries and international agencies. By the end of the Sixth Plan, the country's power requirements are expected to be fully met through medium-size projects leaving some surplus as well.

Among the small projects, the Namche project (520 kw.) got off in 1979 and is targetted to be completed within the next three years. It is interesting to note that the smaller a project, the higher is the investment requirement. For example, the total investment in Namche project is expected to be Rs. 50,000 per kilowatt. of the Kulekhani project (60,000 kw.) Rs. 16,000 per kilowatt and for the Karnali project (3.6 million kw.) it will be only Rs. 5,000 per kilowatt.

The major projects of Karnali Pancheshwar and Rapti are being studied at present. Karnali, the biggest among these, will require about 18,000 million rupees for completion and will generate about 3.6 million kw. of electricity. It ranks among the top ten potential hydro-electric projects in the world. With such an abundant richness in power resources, the country's economy will be in a position to make a breakthrough in the years ahead if the latent capacity of this single sector is adequately harnessed and its output timely optimised In fact, the hydro-electric potential of Nepal is what oil is to the middle East countries. It is estimated that the Arab nations will be having reserves of "petroleum dollars" of the range of 50 million in the beginning of 80s. Obiously, these countries have been wise enough to optimise their single resources of natural endowment. The "Gold-mine" of Nepal's hydro-electricity is comparable with the mighty position of the Middle-East in petroleum.

One important aspect of hydro-electric development in Nepal is that its potential can be optimised by selling it to other countries. And it is a fact of geography that India can be major buyer of electricity from Nepal. It is also true that India cannot exploit one of the greatest natural resources in the world, which it shares with Nepal, except on mutually cooperative basis . It is highly encouraging to note that His Majestry King Birendra has observed that the execution of the Karnali project is beneficial to both Nepal and India. His majesty is quite keen to see the Karnali and other projects get going. Now that there is a much better understanding between the two countries, it is certain that new hydro-electric projects will further cement the friendly relations between the two countries. □

*Reader, Motilal Nehru College, New Delhi.

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TRENDS

More Durable Mud Houses

TWO simple and inexpensive techniques have been developed to protect mud walls from erosion caused by heavy rains. The technique developed by the National Buildings Organisation comprises of mixing bitumen emulsion with ordinary mud plaster prepared with *Bhansa* and cow dung and applying the same on mud walls. The second technique evolved by the Central Building Research Institute comprises spraying a solution of coaltar in kerosene oil over the mud walls with the help of ordinary spray pump.

Thatched roofs can be protected from early decay and from the fire by applying bitumen stablised mud plaster.

Time-Bound Forestry Plan

THE Central Board of Forestry has recommended elimination of the entire contractor agency from forest working within five years under a time-bound programme.

The 18th meeting of the board which concluded here recently however, did not formulate its recommendations on the proposals for a uniform and comprehensive forest legislation for the entire country which the Prime Minister had supported in her inaugural address.

The board recommended that social forestry programme suggested by the Prime Minister should be taken up at a very large scale, and suggested that efforts be made to attract institutional finance through a project planning approach. The states were advised to take up afforestation under the centrally sponsored schemes of rural fuelwood plantation for which Rs. 4.5 crores had been provided during the current year. The board suggested that the National Development Council should take up the question of bringing social forestry schemes under the central sector.

Dandekar Panel's Proposal for Increasing Farm Jobs

THE Dandekar Committee on tax measures to promote employment has recommended a ban on the import of harvester-combines.

The committee, which made a special study of agricultural mechanization, has come to the conclusion that the harvester combines, have displayed harvesting and threshing labour, while their cost advantage is marginal or nil. In the case of wheat it was only Rs. 12.54 an acre and in the case of paddy it was negative.

The committee thinks that under these circumstances there is little justification for the use of harvester-combines. Hence it has suggested that either the excise or import duties on them should be increased to keep them out or they should not be imported.

The estimated expenditure per acre for harvesting and threshing in the case of wheat shows only marignal advantage of mechanization. With harvester-combines the cost of the operations came to Rs. 165.97 and equipment Rs. 157.59. The cost of these operations without harvester-combines came to Rs. 178.51, of which labour charges came to Rs. 121.17 and equipment Rs. 57.34.

In the case of paddy the cost per acre with and without harvester-combines came to Rs. 204.26 and Rs. 191.82 respectively.

Market Oriented Farming

Dr. M. S. Swaminathan, Member of the Planning Commission, pleaded for a drive to accelerate the Indian agricultural progress from the subsistence farming to the market-oreinted farming level.

Opening a three-day national seminar on "Teaching and Research Programme in Agricultural Economics", organised by the Indian Agricultural Research Institute, in New Delhi recently, Dr. Swaminathan said, to improve the economic lot of the poorest sections they should be involved in production in agriculture and allied sectors in such a way that they have something marketable to offer.

Four States in India (Punjab, Haryana, Rajasthan and Karnataka) had raised the economic level of their poorest sections by adopting this approach. Given the will and the effort, other States could do the same, Dr. Swaminathan said.

Toning Up Infrastructure

THE standing committee of Labour Ministers was of the view that the key to success of the Sixth Plan was the development of human resources and, in particular, the development of the necessary infrastructure for employment and training services.

The two-day meeting of the standing committee identified a variety of sectoral programmes including the expansion of capacity in steel, non-ferrous metals, capital goods, fertilisers and petro-chemicals.

Speedy Import Substitution

CHANGES in the licensing procedures, import policy and customs and excise duty structure have been recommended by an experts committee to accelerate the pace of import substitution.

In its interim report the Committee recommended a comprehensive package of measures designed to divert investment to areas which lead to import substitution.

The committee wants the government to set up a standing committee on import substitution consisting of industrial, technical, financial and economic experts in the industry ministry to focus attention on import substitution as a policy and as a strategy on a continuing basis.

260 Crore Outlay for Sericulture

THE sub-group on sericulture, set up by the government of India, in its White Paper has recommended an allocation of Rs. 260 crore for the development of sericulture in the country during the Sixth Plan. This is the highest ever allocation sought for sericulture during any Plan. □

BOOKS

Small and Marginal Farmers

Development of Small and Marginal Farmers and Agricultural Labourers: An Overview of Policies and Programmes by T. K. Chakravarty; Published by National Institute of Rural Development, Rajendranagar, Hyderabad-500030. Price Rs. 45.00.

DIFFERENT evaluation studies have defined 'a small farmer' in different ways. The author has, however, for the purpose of his discussion, used the definition adopted by the Government of India in the Small Farmers Development Programme. Accordingly, 'a small farmer' is defined as one who has ownership of dry land between 1 and 2 ha. and 'a marginal farmer' as one owning less than 1 ha. of dry land.

The book is divided into three chapters. The first gives the economic profile of the small and marginal farmers and agricultural labourers—the structure of their holdings, their resource base and its utilization as compared with the well-off farmers with larger holdings. Chapter two reviews the policies and programmes formulated and implemented for their economic development. Summaries of the salient findings of studies undertaken by different agencies to assess the various aspects of the SFDA|MFAL programmes in different parts of the country are presented in the third and the concluding chapter. It is heartening to note that given the necessary inputs and services, the small and marginal farmers can do exceedingly well.

A 32-page bibliography is given at the end of the book for those who wish to avail themselves of more details on the specific aspects of the problems of these villagers.

This is a welcome compilation of the available factual and statistical information on this vital subject. It does not, however, seek to propound any new ideas for improving the economic condition of this weaker section of cultivators.

—R. M. Bhatt

Financing Agro-Industries

Financing of Agro-Industrial Development in India (A study of Uttar Pradesh) by Badar A. Iqbal; published by Kumar Publications, Aligarh, Pages: 182; Price: Rs. 50; Year 1980.

AGRICULTURE, exposed to the vagaries of the weather from time immemorial, continues to be the backbone of Indian economy. The view that agriculture can be freed from its dependence on nature by development of agro-industries on a large scale has been expressed by the author. These industries, he says, have the potential of bringing improved techniques of production based on science and technology to the rural sector, effect a major transformation in the socio-economic and cultural development of the countryside and also help strengthen the country's economy. Uttar Pradesh, a State with the biggest population in our country, is hardly equipped to provide the means of livelihood to the entire rural working force. Empolyment opportunities will, therefore, have to be found for them in sectors other than agriculture.

A large number of financial institutions have bee set up in the State recently, but they are not perforn ing their role to the desired extent. After a thorou study of the State's problems, the author says the has been a wide gap between the credit requiremen and finance provided for the development of agr industries. This gap should be filled by the Sta Government.

The title of the book is a bit misleading. One ma get the impression that the author is dealing wi agro-industries in India as a whole when, in point fact, his views and conclusions concern mostly abou U.P. though some aspects of financing agro-indu tries are bound to be common to the country as whole.

—Arun Sharn

Demand Theory in a Mixed Economy

Demand Theory and Economic Calculation in Mixed Economy, H. K. Manmohan Singh, Fir Edition 1963 (George Allen), Reprinted by Macmilla (India) 1979, pp. 135, Price Rs. 50.

MARSHALL'S definition of economics, in spite numerous amendments and refinements, as "a stud of mankind in the ordinary business of life" remain till today by far the best. Elucidating the definitio he had indicated that "it examines that part individual and social action which is most close connected with the attainment and with the use the material requisites of well-being". Approachin this way, in the very first sentence of his Principle Marshall established economics as a study o human behaviour concerned with his demand fo economic goods for satisfying certain ends to mea sure the intensity of which he developed his margina utility theory along with the elasticity of deman concept. The subsequent articulation of this basi theme, whether by way of indifference curve theor a la Hicks-Allen-Slutsky, or by revealed preferenc hypothesis a la Samuelson Little-Houthakker, in fac does not fundamentally improve the situation. Never theless, the progress in theoretical economics an increasingly greater dependence on economic judge ment in all forms of economic system required seriou students to critically watch the developmen Dr. Manmohan Singh has done a painstaking stud in fulfilling this needs; his exposition is lucid, un equivocal and logical.

The study under review, which is based on h doctoral work at the University of London complete and published more than 17 years ago describes i Part I the development of the demand theory unde marginal utility, indifference preference and reveale preference hypotheses. As a doctoral thesis, thi portion of the study is excellent. Part II is concerne with the applicability of the theory of demand t planning exercises under different systems of govern ment. Here, the author points out that the theory ha become relevant even in socialist economies specially

under the influence of the majority opinion led by L. Gatovski, Ia. Kronrod and K. Ostrovityanov in Soviet Russia and M. Kalecki and O. Lange in Poland. The author (not to be confused with Member-Secretary of the Planning Commission) has not succeeded well in articulating the usefulness of the theory of demand in objectifying social preferences in planning processes. The chapter on 'Aspects of Underdeveloped Economies' does not live upto the standard achieved earlier, while the last chapter on 'Premises of Demand Theory' contained much repetition and matters which should have been more appropriate in Part I. In fact, during the last two decades, since the first publication of the book, much has been written on the theory and practice of planning by incorporating which Professor Manmohan Singh would have made a more valuable contribution towards the understanding of the subject.

—**Bepin Behari**

Marketing

Marketing by Rajan Nair, Sultan Chand & Sons, New Delhi Pages 400; Price Rs. 20.

NAIR'S book is a few marketing books rolled into one and deserves notice at least for the quantum of material compressed into some 400 pages. It is intended principally for the under-graduate student and covers the syllabi of several course; thus it will receive wide acceptance.

A book of this nature can suffer from unbalanced expositions of various topics but Nair has been successful in not being carried away in his anthusiasm for some subjects and apathy to others. But like most of our authors, he has failed to spend adequate time on the whole exercise with the result that this book does not turn out to be 'the book' but another ready-for-munching materials. Is it, for instance, too much to expect in this country a book like EPL Brech's Management in which he covered all the functional areas of Management in a matter of 1000 pages or so ? It became a complete guide for students all over the world. Why couldn't we have produced simple, easy to understand books, at least in functional areas of Management?

It is no use expecting in a book of this nature originality of thinking or new ideas. This it was not intended to contain. The author has depended upon several authors and has picked material from standard works.

Considering the wide range of topics covered, the way they are covered and the price of Rs. 20 for library edition, this is a good book.

—**Kewal Soeny**

Farmers

Marginal and Small Farmers: Perspectives, Problems and Prospects, by S. P. Sinha, Manisha, Muzaffarpur, 1977, Pp. 194, Price Rs. 50.00.

THE book under review deals with one of the most important areas with which both academicians and planners are greatly interested. It is based on a field survey conducted during 1972-73 of a region which is backward not only in terms of area but also its economy.

The book deals with the problems of marginal and small farmers of Bahadurpur Block falling in the district of Darbhanga (Bihar). It has been divided into five chapters excluding a Foreword in the beginning, and appendices at the end.

Chapter one deals with the objectives, methodology, concepts, and justification for the study. Besides, the level of backwardness of the region, the socio-economic constraints faced by the marginal and small farmers, and the various steps taken by the government to ameliorate their condition have been highlighted.

Chapter two deals with the setting. In this chapter the author has examined the various socio-economic characteristics of the sample, including income distribution and employment status. Caste playing a dominant role in determining social status has also been brought out in this chapter.

Chapter three is devoted to the study of the problems and prospects of the marginal and small farmers. In this chapter, statistical methods have been used to process and analyse the data based on empirical investigation. The analysis to denote the production elasticities of different input factors has been ably brought out with the help of Cobb-Douglas type of production function. In chapter four, income, consumption, debt, etc., of the small and marginal farmers have been examined scientifically. The last chapter brings out the conclusions and suggestions on the basis of the study.

After going through the book one gets an impression that both chapters three and four, could have been conveniently put together under the same heading—'Problems and Prospects'.

The author has done a valuable service by highlighting several aspects of small and marginal farmers which have not been brought out by other studies. The planners, policy-makers, applied economists, other social scientists, and administrators working for the poorer section of the society may find the book useful and interesting.

—**B. N. Sahay**

Management

Principles and Practice of Management by L. M. Prasad; M/s. Sultan Chand and Sons, Daryaganj, New Delhi-2; Pp. 399. Price Rs. 20 (Student Edition).

INDIA is a developing country where public and private sectors cannot afford to linger along the beaten track of age-old routines and practices of a native character in the commercial and Industrial establishments. Evidently for this country, all the more, management is comparatively new and continuously expanding branch of knowledge which has acquired dimensions of a field of study, teaching and practice. There are very few books of indigenous origin to deal with management in all its vicissitudes of principles and practice. Here is an abridged volume which touches every fibre of this discipline and in spite of having all the attributes of a handy text-book, it is diverse and comprehensive enough to cope with the basic and growing needs of students, teachers and professional practiioners The narrative is effortless, fluent and so wholesomely to the point that it makes a readability of its own to suit the

requirements of each and every interested reader.

—Rashmi Khorana

Child Development

Facets of Child Development edited by K. C. Rao and S. Gururaja, National Institute of Public Cooperation and Child Development, New Delhi. pages 258, Rs. 30.

INDIA ranks second largest in the world in the child population. 1971 census shows India's children in the age group 0 to 14 numbered over 230 million constituting about 42 per cent of the total population. The population projections estimated the child population to have risen to 259 million in March 1979. India has shown consistent interest in the welfare and development of the children. It is among the few countries to have a National Policy for Children. India has been a major force for the evolution of the concept of the International Year of the Child (IYC) and prepared a National Plan of Action to observe IYC in the year 1979 with specific themes for each month in the year.

The book under review, a collection of eleven monographs written by social scientists, attempts to present different aspects of child development and child welfare in India. It provides a developmental perspective on Indian children. The monographs have been arranged under three groups.

Statistical information and references add to its up-to-dateness and reference value. The book is a must for all libraries and for use for all engaged in the field of child development.

—S. K. Dhawan

Quixotic Treatment to Economic Theory

From the Autobiography of Economic Theory: Vikas Mishra: Kalyani Publishers, New Delhi. 1980. pp. 169. Price Rs. 45/-.

THIS is a rather curious and interesting book in its own way. It deals with the principles of economic theory in the manner of Don Quixote. The humour, irony and seriousness of the author's views on theoretical economics are running throughout the work.

For instance, he wants us to believe that economics is an empirical science, a conceptualisation of human and material behaviours in a given situation (p. 11). This is hardly true now because human behaviour cannot be measured by any dependable yardstick in clear terms. Otherwise, pollsters could predict exactly what would be the final outcome of any election. They do not have the knowledge, much less the means to measure accurately human behaviour.

Similarly, his thesis on growth multiplier is pure theoretical gimmick. He does not give any concrete instance of how the multiplier is measured or how it accelerates the growth rate. In a way he admits his own shortcomings in this respect (p. 129).

His view that the Indian economy is likely to be in for more serious trouble because of inadequate investment in producing consumer goods in bulk (p. 164) will be shared by practical economists.

However, the book is a controversial one giving as it does a mixture of a serious and humorous and sometimes ludicrous sides of theoretical economics. It is enjoyable to read but to what extent it contributes to the knowledge of economic theory is doubtful.

—E. P. Radhakrishnan

Marketing—A Management Science

Marketing for Accountants and Managers by R. J. Williamson; First Indian Reprint 1980; published by Allied Publishers Pvt. Ltd, 4 Shivaji Marg, New Delhi-110015; pp. xvi-273, price Rs. 30.00.

A full-fledged market study constitutes an essential step for the success of industrial ventures, both existing and new. For the developing countries, it has assumed a new dimension in the context of financial support extended by the term lending institutions. At the same time, the corporate management with its new heights gained in cybernetics has done a great deal in properly evaluating the role of marketing in the dynamic perspectives of economic growth.

The present title which studies marketing as a recognised management science elaborates the concept of marketing both in its traditional function and dynamic appendages by analysing the time-series data and highlighting strategies of market planning and behaviour which will together lend a distinct credence to the shaping of the entrepreneurial judgment.

The book runs into 12 chapters, an appendix on revision exercises chapter-wise, a well equipped index and a bibliography. The morphologies of the market structure finds a precise and a cogent treatment while the planning strategy to rate the marketability factor high with various aides have been well set. Various facets of the strategy have been examined in the context and wherever possible, the actuarial aspects detailing on the cost-benefit calculus have been focussed. The last three chapters, viz, The Marketing Plan, Organizing the Marketing Efforts and Control are particularly interesting for these put the accountant at the centre of the stage with a conceptual clarity of such novel ideas as situation audit, activity grouping, variance analysis, contribution approach and the like.

—Amar Nath Dutta

Indian Sub-Continent

India, Pakistan, Nepal and Bangladesh by P. K. Mishra; pages 286; Price Rs. 70/-.

THE book under review is an attempt to study the relations between two relatively small states in the immediate neighbourhood of a large country (India) and whose foreign policies are dominated by their perceptions of and their relations with this neighbour. The significance of such a study within the regional context lies in the fact that until now no comprehensive work has been undertaken by scholars of any country on this subject. A systematic attempt has been made in this study to investigate these hitherto unexplored areas.

Though one comes across a vast amount of literature relating to the internal developments of the South Asian nations, there seems to be hardly any worthwhile study on the international behaviour of these nations, particularly in the intra-regional context. The study is based on the author's M. Phill dissertation, 'Pakistan-Nepal Relations : Converging Interests and Parallel Strategies' which he submitted in the School of International Studies, Jawaharlal Nehru University in 1972.

Study is of much interest to the history and political scholars of the country and it also alerts India to be watchful regarding the moves of the neighbouring countries. It is an interesting study.

—B. R. Kharbanda

What Science can do .....

(*Contd. from Cover II*)

A Street in Calcutta

about ten million people in the metropolis for fuel, lighting and organic manure ? I should not forget to add the cowdung from 30,000 cattle in the city, the number must be over two lakhs in the metropolitan area.

To give an example of high cost technology, the CMDA has set up a sewage treatment plant at Howrah at a cost of Rs. 3 crores. Pipelines to carry the sewage to the plant have not yet been laid. House connections are proving difficult. So, the sewage treatment plant is practically lying idle. This is the fate of high-cost technology in our country. Am I right in asking for intermediate or even primitive technology ? As a matter of fact, you will be glad to learn that we are introducing through the CMDA and the municipalities a scheme for converting bucket latrines into sanitary pit latrines. There are 1.5 lakh such latrines in the metropolitan area. We shall convert all of them free of cost. However, the cost which the Government has to bear on this account is over Rs. 1,000 per unit. If one amongst you can design another one with a saving of Rs. 100 per unit, there will be a considerable saving of Rs. 1.5 crores or more. Is it a small Challenge ?

Pollution

We often talk of the air pollution and water pollution. Whenever we suggest some control measures, the factories plead inability because of the high cost involved in treating industrial waste and gases before they are discharged either into the river or air. This is affecting our health. Chest diseases are on the increase, the TB has become quite common. If scientists can apply their minds and affect such control measures at reasonable cost, the benefit from better health standards will justify all cost benefit analysis. Here again, is it a small challenge ?

Or let us take the case of Calcutta garbage. We accumulate 2,500 tonnes of it everyday. Can it be recycled ? I have been assured by many that some of it can be recycled. As a matter of fact, the Agro-industries corporation is doing it but on a very small scale. Here is a challenge for our scientists to do something so that garbage can be recycled or at least put to productive use.

Housing

To talk about the housing problem in the city, one is appalled by the abominable housing conditions of the majority of the people. I have heard much talk about low-cost housing but when it comes to brass tacks, I have found that this low-cost is quite high for the maority of the people. In Chetla for example, in the slum modernization scheme, a tenement can be let out at an economic rent of nearly Rs. 98 per month. How many slum dwellers can afford it ? We have reduced it to Rs. 18 per month but can the Government subsidise public housing to such an extent ? Will the scientists consider it a small challenge, if I were to ask them to provide real low-cost housing for about 30 lakh slum dwellers ?

One reason is that I have been baffled by many such questions, yet I have faith in you. Even when baffled, I refuse to submit to failure. In our experience, Calcutta solved many problems in a typical Calcutta way. If not by technology, by spirit.

I would like to warn the scientists who, influenced by western affluence and ideas have a tendency to toe the western line, that to us a city is not a brick, mortar and concrete mix ; a city to us is its people. Whatever the scientists do, they should keep in mind the interests of the people.

The city had no investments in the last 50 years or so. Whatever investments were made during this period were aimed at helping the wealthier citizens, but the slum lanes did not receive any attention. Water supply was extended to the richer parts of the city while the slums continue to remain the centres of disease and death. The scientists should do well to read what is written on the walls and concentrate their energy and reorient their attitude towards helping the poor and the under-privileged in the city. When I say this, I do not have the charity approach in mind. I want solid and scientific methods and policies. I would expect not mass vaccination to prevent T. B. and respiratory diseases; I would expect measures to control air pollution and improve the people's health standards, not only immunisation but removing the cause. If I may make a concrete suggestion here there should be a scientific committee just for the sake of guiding the urban development authorities, the municipalities and other organizations in their tasks. □

Victoria Memorial, Calcutta

Licensed U (D)-52 to post ... pre-payment at Civil Lines Post Office, Delhi

view of the Nukala Ramachandra Reddy Puram, Hyderabad

Houses for low paid employees in Hyderabad

. Satyarao*

BOUT ten kilometers from the Secretariat in yderabad, a sprawling housing colony is coming up. ukala Ramachandra Reddy Puram, named in emory of a former minister, this 1700 unit cooperative housing colony, is meant for the class IV and a w other low paid employees of the Andhra Pradesh ate Government working in Hyderabad and Secunderabad. The location is on the Bombay national highay at Yusufguda.

The Hyderabad Urban Development Authority, a ate Government agency, is constructing the colony ith financial assistance from the Housing and Urban evelopment Corporation. Against the planned 818 ouses in the first phase, 268 are completed and 28 are nearing completion. Work on the remaining expected to begin soon. In the second phase, it proposed to construct 820 houses.

The colony has many unique features. There are all 16 types of houses to suit the needs of different eople. There are houses for the economically weaker ection, and a good number of Low Income Group ouses. There are a few Middle Income Group houses ... for those in the higher income ranges. Though e plinth area of the house differs, the area of each ot for all types remains the same i.e. 110 sq. yds. esides the class IV employees, there are several erks and even a couple of section officers. There is o segregation of types, a symbol of perfect social quality.

The members paid the cost of the 50 acre plot ggregating Rs. 2.42 lakhs from their own resources. imilarly they paid the 30 per cent share of the st of the building (70 per cent is advanced by the UDCO) also from their own resources without epending upon the housing loans for government nployees. Out of the 5000 and odd such employees the twin cities, over 2000 are members of the ooperative Housing Society. In all they paid over s. 20 lakhs to the HUDA for undertaking the onstruction.

News Reporter, A.I.R. Hyderabad.

...s Plant Scheme in Haryana

THE Gobar Gas Plant (GGP) scheme was launched in Haryana about seven years ago. But it could not make much head way. Out of over 600 plants financed so far in this district 50 per cent are yet to be completed and even among the finished ones, only one half are in working order. No plant was installed during last year while the annual target was of 900 plants. As per the official records only 623 plants have been installed so far while the target is of 3,700.

According to a survey conducted by the Punjab National Bank, a credit gap of Rs. 20.16 lakh was to be covered under the GGP during the district credit plan period 1977-1980 but till today, it has only reached upto about Rs. 50,000. The recovery position of most of the loans is even less than ten per cent.

Many reasons are attributed to the poor performance of the scheme. The authorities of GGP were more interested in targets than looking into other complications. It lacked proper guidance and intensive training in construction, maintenance and feeding of animal dung in right proportions. Subsidy from the Khadi and Village Industries Commission was mostly released very late and more often the money reached wrong hands. Very little efforts have been made to revitalise the old plants which are out of order. The high cost (Rs. 4000) also prevented many people from adopting it.

The following methods are suggested to revive the GGP: proper follow-up, intensive training to beneficiaries, complete recovery of loan from the defaulters, availability of finance at the right time and reduction in its cost. A survey of all the existing units should be conducted to know the exact position. Suitable areas should be earmarked and the programme should be intensified in these areas only. □

Shipa Zed

Freelance Writer, Rohtak

Gobar Gas Plant in Haryana

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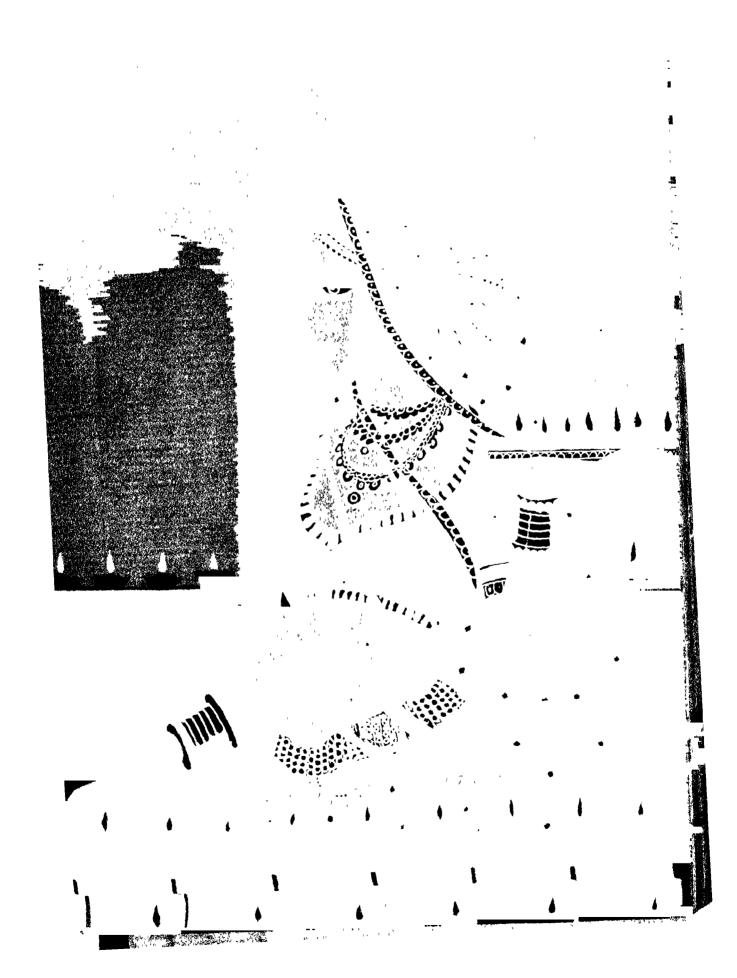
Nehru on National Integration

WHEN we fought for India's freedom, it was for the freedom of the whole of India. It was not for the independence of one part of India, of Madras or Bengal or Bombay or Uttar Pradesh or the Punjab. When we achieved independence, we achieved the independence of the whole of India. We established the great Republic of India of which all these States are parts, and we are all proud of being the citizens of this Republic of India. If we forget this larger ideal of India and think only in terms of a State or a community or a caste or a language, we lose control and drift into wrong directions.

The whole of India from the Himalayas to Kanyakumari belongs to each one of us. We are joint inheritors in this great land. The different provinces do not separate us, just as the different districts do not separate us. Nor do the different languages separate us. All the great languages of India are old, well-established, advanced languages and they are sister languages. We have to help all of them.

In our national struggle, we had unity which bound people from every State, from every religion, from every caste, and from every language-group. This unity brought us our independence. We are now engaged in the new fight against the poverty of India in order to bring about economic progress. This also calls for a united fight, if we are to succeed.

WE have now to face a bigger and a greater task and that is to build up a New India ; in which we will put an end to poverty, misery and unemployment. We have to work for this also together.

WE have many religions in this country and they have lived generally at peace with each other for thousands of years. It has been the tradition of India that the people of one religion tolerate the people of the other religions. That has been the hall-mark of Indian culture. And yet some people have made religion a battle-cry for fighting each other. They have degraded religion. Some people have built up communal organisations, bringing religion into politics, and this has caused much harm to our country. We have to honour not only our own religion but the religions of others. A very great ruler of India who lived 2,300 years ago, Emperor Asoka, has said that he who honours the other man's faith honours his own, and in doing so he makes others honour his own faith. But if he does not honour the other man's faith, his own faith will also not be honoured. So, we have had this lesson of tolarance for ages past in India.

I wander all over India and love to see the great variety and richness of this country. Both the variety and the unity of India are important. Variety gives richness, and unity is essential.

The unity of India is the basic fact which should count today. This makes all of us who live in this great land the citizens of India, not of Coorg or Mysore or any particular State or part of the country.

THINK of the great task before us and of the exciting problems that face us in India. All our people must have equality of opportunity, and therefore, the barriers, whether they are barriers laid by religion or caste, or State or language, must not be allowed to come in the way. We should think of this country of ours as a big family the members of which ought to co-operate with each other, and we should ever cherish the idea that the whole family flourishes and not merely a few persons in it. You have to think therefore what your individual part may be in this great effort. Also you have to feel actively that you are a partner in the tremendous undertaking.

YOJANA

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Cover Design : P. K. Sengupta
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EDITORIAL

Employment Sch[illegible]

THE widely prevalent poverty in rural [illegible] reduced only through providing gainful employment to the poor people. The government has been trying through many schemes to achieve this—the most important among them being the Centrally-sponsored Crash Scheme for Rural Employment and Food for Work Programme, and the Employment Guarantee Scheme of Maharashtra. Even though these schemes had provided work for temporary periods to a portion of the poor population, they have not made any deep dent in the problem. The defects in the CSRE and FWP had already been revealed in evaluation reports and similar lacunae in EGS have now been pointed out in a joint study by the Central and State organisations. Some of the common defects noticed in such schemes are as follows : The benefits accruing more to the well-to-do sections than to the poor ; inefficiency and, in some cases, corruption of the local officials ; no proper identification of the really needy persons ; delay in carrying out works and even non-completion of some of them ; time-lag in the payment of wages ; non-creation of durable assets in many cases ; even the few assets not properly utilised due to lack of complementary arrangements by the beneficiaries and the assets not being maintained later, etc.

The concept of employment for employment's sake and not as an integral part of economic development is the basic defect in the special schemes. The best way to provide jobs is through productive work and this needs development programmes in agriculture and allied fields and in cottage and small industries which are interlinked with medium and large industries for common production and marketing. The examples of Japan, and, at home, the cottage match industry of Sivakasi in Tamil Nadu and AMUL dairy of Gujarat, are there for being followed on a large scale. There is vast potential of untapped wealth and much-needed public works even in rural areas which can provide continuous employment to millions of people. When employment is built into the development programmes, as it should be, there will not be any need for special job schemes, except as relief measures during natural calamities. It is hoped that the lessons of past experience will be taken into account while implementing the new and bigger National Rural Employment Programme, so that public money is not wasted. □

Regional Variation in Productivity of Rice and Wheat in India

Shanti Sarup and S. C. Gupta*

THE basic objective of agricultural planning in India had been to achieve a balanced growth of development in all States. But the experience indicates that these development programmes have not been successful in attaining this basic objective. It is observed that not only some states have progressed much better than others but also that the growth had been stagnant in some cases in the recent past. In this context, the regional variation in agricultural productivity and their measurement forms an interesting study. Here is an attempt to study the variation in yield per hectare of two important cereal crops namely rice and wheat in India during the period 1967-68 to 1976-77. The main feature is a comparative study of regional disparities. The Units of regions have been taken as the political boundaries of the States. As agriculture is subject to annual fluctuations, a comparison of the productivity during two individual years would not normally give a correct picture of the underlying trend. So, these fluctuations have been eliminated by fitting a straight line trend. Thus, the trend values were computed for the initial and end years and the variation in productivity in different States as well as the all-India average for each crop was examined on this basis. The estimated trend values of rice and wheat crops for the two and half years alongwith their growth rates are presented in Tables I and II respectively and the results are discussed below.

TABLE 1

Initial and final year trend values of rice yield per hectare and percentage rate of growth.

States	Trend 1967-68	Value 1976-77	Growth rate per annum
Andhra Pradesh	1396	1579	1.48
Assam	977	993	0.19
Bihar	867	890	0.28
Gujarat	728	946	2.69
Haryana	1261	2135	7.34
Himachal Pradesh	1085	1145	0.59
Jammu & Kashmir	1758	1680	-0.70
Karnataka	1769	1752	-0.12
Kerala	1444	1528	0.67
Madhya Pradesh	774	690	-1.21
Maharashtra	934	1287	3.73
Orissa	980	801	-2.29
Punjab	1290	2605	11.05
Rajasthan	738	1195	5.06
Tamil Nadu	1615	2089	3.42
Uttar Pradesh	702	901	2.98
West Bengal	1226	1184	0.43
All India	1060	1151	0.98

* Scientists, Indian Agricultural Statistics Research Institute, New Delhi.

It is observed that the all-India average yield of rice varied from 1060 kg|ha in 1967-68 to 1151 kg|ha in 1976-77. In 1967-68 the yield of rice varied from about 700 kg in Uttar Pradesh, Gujarat and Rajasthan to about 1750 kg in Jammu & Kashmir and Karnataka. The States might be broadly grouped as follows :—

Karnataka (1769) ; Tamil Nadu (1615) ; Kerala (1444) ; Andhra Pradesh (1396).

Jammu & Kashmir (1759) ; Punjab (1290) ; Haryana (1261) ; Himachal Pradesh (1085) ; Rajasthan (738) ; Uttar Pradesh (702).

West Bengal (1226) ; Assam (977).

Orissa (980) ; Bihar (867) ; Madhya Pradesh (774).

Maharashtra (934) ; Gujarat (728).

Ten years later, in 1976-77, when the all-India average was 1151 kg/ha the State averages varied from about 690 kg/ha in Madhya Pradesh to about 2600 kg/ha in Punjab. There was a significant depression in the productivity of rice in Orissa during this decade while in Karnataka, Jammu & Kashmir, West Bengal and Madhya Pradesh the decrease was marginal and statistically not significant. The productivity of rice increased significantly in Maharashtra and Rajasthan. Both these States were below all-India average in 1967-68. The above groups of States then appeared as under :

Tamil Nadu (2089) ; Karnataka (1752) ; Andhra Pradesh (1579) ; Kerala (1528).

Punjab (2605) ; Haryana (2135) ; Jammu & Kashmir (1680) ; Rajasthan (1195) ; Himachal Pradesh (1145) ; Uttar Pradesh (901).

West Bengal (1184) ; Assam (993).

Bihar (890) ; Orissa (801) ; Madhya Pradesh (690).

Maharashtra (1287) ; Gujarat (946).

This analysis depicted that regional pattern of rice productivity broadly remained the same except that Punjab and Haryana States in northern India excelled the southern States. Within each region, of course, the States changed rankings due to different growth rates achieved during the decade. In terms of actual average yield in 1967-68, the all-India average increased by nearly 10 per cent over the ten years. However, in different States the rate of increase varied from 23 per cent decline in Orissa to over 110 per cent increase in Punjab. The rates of increase during the decade in different regions were as under :

Tamil Nadu (34.2) ; Andhra Pradesh (14.8) ; Kerala (6.7) ; Karnataka (-1.2).

Punjab (110.5) ; Haryana (73.4) ; Rajasthan (50.6) ; Uttar Pradesh (29.8) ; Himachal Pradesh (5.9) ; Jammu & Kashmir (-7.0) ; Maharashtra (37.3) ; Gujarat (20.9).

Assam (1.9) ; West Bengal (-4.3).

Bihar (2.8) ; Madhya Pradesh (-12.1) ; Orissa (-22.9).

Largest increases have been obtained in the northern States of Punjab and Haryana and to a smaller extent in generally high yielding southern States, while in the eastern States there is practically no progress. There is rather a decrease in productivity. The States of Maharashtra and Rajasthan which were below all-India average have moved up above the all-India average position. It seems, therefore, that while variation in agricultural productivity may be explained, in good part, as due to the regional differences in soil and climatic conditions together with the extent of irrigation facilities, the variation in the rates of increases during the last decade may be attributed to the development of necessary infrastructural facilities and level of adoption of modern technology in these States.

TABLE II

Initial and final year trend values of wheat yield per hectare and percentage rate of growth.

States	Trend 1967-68	Value 1976-77	Growth rate per annum
Bihar	1046	1389	4.40
Gujarat	1321	1725	3.54
Haryana	1841	1893	0.33
Himachal Pradesh	791	1271	6.32
Jammu & Kashmir	945	899	-0.67
Karnataka	365	727	9.19
Madhya Pradesh	701	812	1.74
Maharashtra	339	1768	14.05
Punjab	2057	2452	2.36
Rajasthan	1054	1311	2.73
Uttar Pradesh	1166	1256	0.85
West Bengal	1604	2219	7.59
All India	1154	1396	2.44

Wheat is extensively cultivated in the twelve States of India. In 1967-68, the all-India average yield of wheat was 1154 kg/ha. Between States it varied from above 340 kg/ha in Maharashtra and Karnataka to over 1840 kg/ha in Punjab and Haryana. In seven of these States the productivity of the crop was below all-India average. After ten years in 1976-77, the all-India average productivity of the crop increased to 1396, thus, showing about 25 per cent increase over a decade. There was a general improvement in the productivity of the crops in all States except Jammu & Kashmir and the average yield kg/ha varied from about 725 in Karnataka to over 2200 in Punjab and West Bengal. The northern States of Punjab and Haryana, the eastern State of West Bengal and the western region of Gujarat and Maharashtra constituted the wheat area with comparatively high yields ranging between 1725 kg/ha, to over 2450 kg/ha, while Karnataka, Madhya Pradesh and Jammu & Kashmir are the States with considerably low yields. However, the rates of increases achieved during the year do not confirm to the same regional pattern. The rate of increases during the decade varied from zero (marginal decreases) in Jammu & Kashmir to about 140 per cent in Punjab. It is observed that the rate of increase in low productivity region is much higher compared to those States where the productivity was already high. In West Bengal, however, the rate of increase in productivity was around 76 per cent during this decade.

Regional pattern of rice productivity broadly remained the same except that Punjab and Haryana States in Northern India excelled the southern states.

The comparison of the progress of the two crops in different States during this decade shows that in the case of wheat the progress achieved was much better than in rice. The average increase in productivity at all-India level was around 25 per cent for wheat while it was only 10 per cent in respect of rice crop. The striking feature was that the northern States of Punjab and Haryana performed best in both the crops. This further confirms the general belief that the maximum benefit from Green Revolution has gone to the farmers in the wheat zones of the country. More emphasis should be placed on researches for increasing productivity per unit of land in rice crop. Further, in view of the variations in the levels of agricultural development in various regions and the regional diversity of the resource endowments, there is a need to evolve location specific technologies for minimizing the regional imbalance. □

Nepal's Economic Development

Navin Chandra Joshi*

BOUNDED by India in the south and by China in the north, Nepal is an independent Himalayan Kingdom with about 12 million population and a total area of 54,362 square miles. The physical setting of this landlocked country consists of the plain (Terai), the hills and the mountains, thereby carving out three broad geographic regions each with its own distinctive environment and natural resources. Mount Everest, the highest peak in the world, forms the most attractive section of the whole Himalayan range.

The Terai region has the greater part of economic growth because of its richness in forest and agricultural resources, transportation network and a better scope for industrialisation. The Himalayan region is a marginal area for human occupation due to its harsh environmental conditions and has sparse population engaged mainly in barter trade in pastoral and some agricultural goods. The hilly and mountainous regions have about 60 per cent of the total population with two-thirds of the total area and less than a third of the total cultivated area. Obviously, the highlands region faces a heavy pressure of population on its limited agricultural land with no industry worth the name.

For development purposes, the country has been divided into four regions—viz, the far western, the western, the central and the eastern, with regional centres at Surkhet,Pokhara, Kathmandu, and Dhankuta respectively. Following the adoption of the partyless panchayat system, the village and district panchayats of Nepal, run by the elected representatives of the people, have already developed themselves not only as political units but also as effective means for local development by mobilising local resources and manpower and by eliciting mass participation. The recent political referendum in the country again vindicated the strength of the existing panchayat system as a vehicle for development. Like public and private sectors, Nepal's economic plans have provided for a Panchayat Sector with financial and physical targets of its own.

The country adopted its First Five Year Plan in October 1956. In July 1962, the Three Year Plan was launched. Subsequently, the Third Plan for a five-year period was implemented as from July 1965. While the Fourth and the Fifth Five Year Plans ended in April 1975 and April 1980, the current Sixth Plan is for the period 1980—85. Table I depicts the picture of outlays in these Plans.

*Lecturer, Motilal Nehru College, Delhi University and former Colombo Plan Reader in Nepal.

Plan Outlays

(Rs. in million)

Plans	Estimated Outlay	Actual Outlay
First Five Year Plan . .	330	214.30
Second Three Year Plan .	600	566 62
Third Five Year Plan . .	2500	N.A.
Fourth Five Year Plan . .	3540	N.A.
Fifth Five Year Plan . .	11404	N.A.
Sixth Five Year Plan . .	28000	..

N.A.—Not Available.

Almost 90 per cent of the country's population i engaged in agriculture when only 14 per cent of th land area is under cultivation. Forests cover 32 pe cen of the land and the rest constitute the higl mountains. Of the total cultivated area of the country the entire Terai region occupies more the 60 per cen although it forms only about 20 per cent of the gros area of the country.

It is true that development expenditure has beei increasing from Plan to Plan. For example, it ros from Rs. 330 million in 1956 to Rs. 28,000 million almost by 85 times, in a period of about 24 years This is phenomenal. But then, in the present-da world of inflation, financial targets have become o doubtful validity and reliability in so far as actua development is concerned. Now the public secto expenditure during the Sixth Plan period will be o the order of 70 per cent of the aggregate outlay.

Industrial Scene

The present rate of investment in Nepal is aroun 15 per cent of the Gross Domestic Product (GDP) The major portion of the economy is still non-mone tised and therefore, the larger portion of savings ha to come only from the monetised sector. This fac highlights the need for a considerable portion of tota investment from external assistance. While non developmental expenditure has been increasing fron year to year, additional money supply has been use more for financing non-developmental activities witl the help of deficit financing. This has been one majo reason for building up inflationary pressures in th economy from year to year. Increase in prices o domestic goods and higher prices of imported good have not served as encouraging factors for improvin domestic output. Although inflation is a world-wid phenomenon, in the context of Nepal's economy, i presents itself as a very difficult problem. The reaso for this is that the country's economy is as mucl dependent on its domestic production as it is o imports of various types of goods—both consume and capital goods.

In the matter of domestic industrialisation, His Majesty's Government formulated a new industrial policy in the wake of the Fifth Plan. The policy recognises that Nepal's industrial sector can develop only by making small-scale industries as a catalytic agent. As such, the small-scale industries of the country now assume a pride of place in the scheme of the overall economic development of the country. The small-scale sector comprises modern small industrial units, cottage and handicrafts units as also the traditional small enterprises. A majority of the small units of the modern type are located in the four industrial districts (estates) of Nepal of Balaju, Patan, Hetauda and Surkhet. At Hetauda (in Terai area), there are some units that fall in the category of medium and large scale units. The major aim for establishing industrial districts has been to bring about a regional balanced development in the country. However, the growth process through the small-scale sector has not been able to make any dent in the poverty of the people : nor have the small units developed in size and their scale of operation. A kind of stagnation is only too evident. Amongst the major reasons for this state of affairs are the inadequate infra-structural facilities, lack of entrepreneurial and management expertise, bureaucratic delays and lack of coordination among the concerned ministries, departments and institutions of the Government. As such, development, expansion and modernisation of these industries have not taken place in any significant measure

The hydroelectric potential of Nepal is what oil is to West Asian countries.

Power Potential

With increased emphasis on balancing the growth of different production sectors and geographical regions of the country, power development becomes only too critical an input, not just as an additional facility of infrastructure. Indeed, considering the total potential of hydro-electricity in Nepal, electrical energy becomes an end-product through which the national and per capita income of the country will get pushed up. With proper and adequate harnessing of water resources, Nepal's economic growth must become not only self-sustained but sufficiently viable in the sphere of international trade as well. In fact, the hydroelectric potential of Nepal is what oil is to the West Asian countries.

One important aspect of hydro-electric development in Nepal is that its potential can be optimised by selling it to other countries. And it is a fact of geography that India can be the major buyer of electricity from Nepal. It is also true that India cannot exploit one of the greatest natural resources in the world; which it shares with Nepal, except on mutually cooperative basis. Now it is encouraging to note that the Sixth Plan (1980—85) states that the country would "systematically undertake the development of small hydel projects in appropriate areas of the hill region to foster the development of irrigation and village industries even though establishment of such infrastructure might not be normally feasible purely from economic cost and benefit consideration." The present estimate of Nepal's total hydro-electric potential is 80 million kilowatts.

Exports

In the export field, handicrafts have long been major items of Nepalese exports. These goods are the important items next to jute goods as foreign exchange earners. They provide employment to around five lakh workers. Handicraft sector contributes 6.65 per cent to the G.D.P. of Nepal and on the basis of handicraft sector's contribution to the GDP, it can be presumed that the total production and domestic consumption of handicrafts goods exceed Rs. 550 million per annum.

The country has some financial institutions which help in providing loans and other facilities to all types of industries. There is a need for realignment of policies of the four major institutions—viz., Nepal Industrial Development Corporation, Agricultural Development Bank, Nepal Bank and Rashtriya Banijya Bank—so as to synchronise their lending activities. The Industrial Service Centre provides consultancy services but its functions should be more broad-based so as to undertake supply of plant and machinery, equipments, etc., on a hire-purchase basis to small units. The Sixth Plan envisages the establishment of a separate organisation, viz., Small and Coltage Industrial Development Corporation, to extend credit to local entrepreneurs and industrialists, distribute tools and raw materials and purchase promptly the finished products at market prices.

One major problem faced by the industries of Nepal is how to find and establish a market for their products. The need for governmental assistance in the marketing of products has been duly recognised but nothing has been done in this direction as yet. In the present circumstances, it would be useful and appropriate to set up a national marketing service corporation. It should build up a network of services with the help of techno-economic expertise. It may undertake market promotional activities for the benefit of all types of manufacturers. These activities should consist mainly of providing, promoting and specialising in commercial contacts between sellers and buyers and introducing the requisite quality control and improvement measures as well as a common brand name for inspiring the necessary confidence in consumers about the reliability of products.

Burden on Land

Since agriculture is the mainstay of the Nepalese economy, agricultural development is a pre-condition for growth and industrialisation. The Fifth Plan accorded top priority to agricultural development by allocating 34 5 per cent of the total outlay to this sector. Also, in the Sixth Plan top priority has rightly been given to programmes designed to raise agricultural production and productivity. The major plank of agricultural policy in the Plan is to create conditions in which cultivation of multiple crops becomes possible on the available cultivated land since cultivable land is not sufficient in relation to the manpower of the country. The multiple cropping system will not only help increase agricultural output significantly but will also help to utilise the unlimited rural manpower currently underemployed in the country.

The most outstanding phenomenon of Nepal's agri-ultural sector is that the majority of farmers, both enants and landowners, have very small, fragmented nd scattered holdings. The country's National Plan-ing Commission made an estimate of the average arm families and their per capita income, as is evealed in Table II.

TABLE II

Data on Agricultural Farmers

1975-76 (In Rupees)

	Size of farm			
	Large	Medium	Small	Marginal
Average family Income . .	8,377	7,256	5,305	4,197
Size of Family (In number) .	7 82	6.52	5.61	5.16
Per Capita Income . .	1,071	1,111	984	813

Since these calculations were made, it has been oticed that the per capita income of small and margi-ial farmers has been declining every year. In 1978-79 t came down to Rs. 805 and Rs 522 respectively for hem. The poverty line in Nepal is considered to be at he level of Rs. 730 per annum and below. It means iat all marginal farmers are below the poverty line nd the small farmers are just eking out a living with ie potential threat of coming below the poverty line ny time now. All this shows how tenuous is the ving condition of the majority of farmers in Nepal.

Disparities

The present man-land ratio in Nepal is 300 per 00 hectares of cultivated land while the average size f holding comes to roughly 1.5 hectares. As the ost of cultivation is financed largely by the tenant, ie existing method of cultivation which is generally raditional, does not permit a relatively large unit of arm. Agricultural productivity being too low and he burden of rent and taxes being too high, the najority of peasants live on the margin between sub-istence and destitution. Agricultural productivity night have increased had the elite groups ceased to xercise political domination over the peasant. "In act, the land-owning elites were allowed to exercise lomination over the peasants only in order that the olitical elites might avoid an attack upon their political uthority, while the village elites were necessary in rder that this domination might be exercised effecti-ely. In other words, the peasant bore the burden f sustaining not only his political and economic over-ords but also their local bailiffs" says Mahesh C. Regmin in his book 'Thatched Huts and Stucco Palaces.'

Due to low productivity and lack of capital invest-nent in agriculture, no upsurge could take place in Nepal's agricultural sector and this explains why the country has remained poor with all its abundant natural resources and the patriotism of the people. Further, an important dimension to the development problem in Nepal is the marked disparity in the different regions. It is so between the vertically divided development regions as also between the hori-zontally divided natural regions such as the mountains, the hills and the Terai. Barring the Kathmandu Valley, which is a small pocket, the Terai region leads the rest of Nepal in economic development. It is also true that hitherto no other region has received larger attention than what the Kathmandu Valley got. B. S. Bhooshan says in his 'The Development Experience of Nepal', "The aim of Nepalese planners has been to make great achievements with the least change in the social and political system. This is probably a require-ment of the political and bureaucratic elites who man the system." In any case, so far planning in Nepal has been an exercise of fitting macro-economic theories and models in a highly fragmented economy. Conse-quently, it often lost sight of the common man who constituted the majority.

Development in Nepal has indeed been equated with attaining physical and financial fargets without percolating the fruits of economic progress to the masses. Even with some progress achieved in building the infrastructure within the country, the question of equity was never raised boldly any time and the back-ward groups never got any special assistance. The situation has now been corrected to some extent by adopting the principle of regional planning and decen-tralisation in decision-making However, to what ex-tent it can put the country's economy on an even keel is yet to be seen.

Foreign Aid

As regards development through foreign assistance, Nepal has attracted unusual attention from aid givers and has received aid from so many sources. A large number of aid programmes operate within the limited area of the country. In a developing country like Nepal with limited resources of capital equipment, personnel and technical services. foreign aid naturally plays a vital role. It was since 1951 that Nepal started getting the inflow of foreign aid from various donor countries and agencies such as the U.S.A., U.K., Australia, Canada, China, India, New Zealand, U.S.S.R., Ford Foundation and the U.N.O. Today, India is the biggest aid-giver to Nepal.

It has been noticed that the per capital income of small and marginal farmers has been declining every year.

Nepal joined the Colombo plan in March, 1952. It has been receiving various kinds of aid under the Plan. Indeed, Nepal provides a fascinating example of a recipient who gets economic assistance from diverse sources—communist, non-communist, aligned, non-aligned, developed and underdeveloped countries. With foreign assistance and domestic efforts, the annual average economic growth rate in Nepal has been of the order of about 2.5 per cent but the increase in population has also been of the same magnitude. Therefore, the net

TABLE III
Vital Data of Fourth and Fifth Plans

Items	Fourth Plan (1970—75)	Fifth Plan (1975—80)
1. Projected Growth Rate	4 per cent	5 per cent
2. Estimated GDP at the end of the Plan period	Rs. 7873 million (at 1964-65 prices) Rs. 12061.71 million (at 1974-75 prices)	Rs. 15318 million (at 1974-75 prices)
3. Total Estimated Investment	Rs. 3530 million (at 1964-65 prices)	Rs. 8670 million (at 1964-65 prices) Assuming 3% rise in prices, it comes to Rs. 10,110 million at 1974-75 prices)
4. Estimated Investment in Agricultural Sector	Rs. 1171.8 million (at 1964-65 prices)	Rs. 3581 million (at 1974-75 prices)
5. Percentage of Investment in Agricultural Sector to the Total Investment	33.0%	35.4%
6. Estimated Capital—Output Ratio (overall)	2.3	2.74

growth rate in per capita income has been marginally beyond zero. The vital economic data in respect of the Fourth and the Fifth Plan are given in Table III.

The National Planning Commission of the country estimated that national income should increase by 5 per cent during the Fifth Plan period. It pointed out that "there should be wide scope for the people to contribute to the increment of production through the utilisation of their labour Only then will the increase in production lead to the corresponding rise in their purchasing power and thus derive benefit from economic development." It also stated that drastic changes would have to be introduced from the very beginning of the Plan in land revenue system in order to mobilise maximum resources from the agricultural sector Evidently, therefore, while on the one hand, it is desired to increase the purchasing power of the rural masses, on the other, it is the rural masses that are expected to contribute to the maximum to the Government revenue. The rationale, on the face of it, appears to be sound. Those who are the beneficiaries of development must be asked to make more sacrifices in their consumption standards in order to reap a still richer harvest of income in future. However, this just cannot happen if we examine the position in the context of the Fifth Plan projections. With per capita income of Rs. 804 per annum at the beginning of the Fifth Plan, the rise by Rs. 23 per annum during the Plan period indicates an increase by 2.86 per cent per annum on an average.

The problem of stagnant economic growth can be solved only if the increase in savings and investments becomes a consequence of the success of developmental programmes rather than taken as a cause or even an objective in itself. For an aproach of this kind, a great thrust must be given to higher consumption of basic goods by the masses by putting both underutilised manpower and capital to effective work. In the ultimate analysis, this goal will not be achieved unless there is a more equitable distribution of income and production through an appropriate incomes policy. Indeed, what Raul Prebish found and recommended in the case of Latin American countries will hold good for the developing countries in the Asian region as well. He said, "The upper 5 per cent of the population that consumes 30 per cent, spends per average family 15 times more than the average family group in the lowest 50 per cent of the population. If this were reduced to 9 times, the rate of growth in per capita income would rise from one per cent to 4 per cent." This observation is suggestive of a policy by which major quantum of savings should come from the richer classes of the society. In Nepal, people of these classes essentially belong to the urban sector. Surely, a 5 per cent rate of growth may not be twice as good as a 2.5 per cent in case there is faulty distribution of income and consumption in the whole society.

Finally, a net migration from the rural sector to urban jobs may also be encouraged in order to reduce burden on the cultivated land. Improvement in the quality of labour and economic organisations should take place through education, including scientific research and technical training. The migration of population of a backward region cannot remain for long at the lowest level of human knowledge. Further, an improvement in capital-output ratio in agriculture can be effected better by doing away with disguised unemployment rather than by a capital syndrome. With such a reorientation in planning policy, the rate of savings of the masses will take care of itself. Measures for population control will act as a shot in the arm during the process of development. The irresistible conclusion is that in the absence of an appreciable rise in the incomes of the masses, efforts for mobilising savings from them will be nothing but groping in the dark in search of a black cat which is not there. Author Benkt-Erik Borgstrom has observed that no serious consideration has ever been given to how progress in the field of social justice is to be achieved without changing the given structure of social relations. "While capitalisation of the economy

(Contd. on page 22)

Waste water disposal system for villages

Narendra Verma and V. K. Gupta*

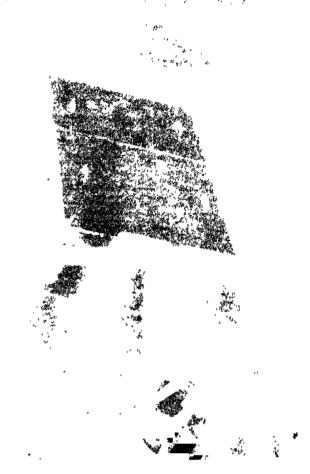
WASTE water disposal from dwellings is one of the foremost problems in rural areas. Waste water is disposed off on roads and lanes causing environmental pollution, encouraging mosquito and fly breeding and thus endangering the health of the inhabitants. The Central Building Research Institute, Roorkee has developed a soakage system for underground disposal of the waste water near its source. A description of the system is discussed here.

INDIA lives in villages. But these villages are stinking in insanitary conditions. The waste water is disposed off on kutcha roads and lanes having inadequate slopes. Movement of carts and animals makes the situation worse. It creates ditches full of stagnant and dirty water. Mosquitos and flies start breeding in mud, creating danger of communicable diseases and health problem grows out of all proportions.

A detailed study of the problem was conducted by the Central Building Research Institute (CBRI), Roorkee and a system has been evolved keeping in view various factors like cost, maintenance and living habits

Salient Features

The system consists of an ash-silt trap chamber and a bore hole. The ash-silt trap chamber is rectangular in shape having 7.5 cm thick wall of burnt brick laid in 1.8 cement sand mortar and is constructed near waste water outlet. It is divided into two compartments by a 7.5 cm thick wall and is covered with an RCC or reinforced brick lid. The size of first and second compartments are 45 cm x 45 cm x 70 cm and 30 cm x 45 cm x 70 cm respectively. Triangular ducts 8 cm x 8 cm in size and 46 cm deep are made in corners and adjacent to each other in both compartments, diagonally opposite to inlet. A hole is left in partition wall 11.5 cm below the top in the duct portion to provide connection between the two ducts. The second compartment is filled with 4 cm gauge brick ballast. In the first compartment silt and ash, that is, havier particles flowing with waste water settle down and floating and greasy materials are trapped. The water having only colloidal and suspended particles rises through the duct of first compartment and flows to the bottom of second compartment through the duct of this compartment. The suspended and colloidal particles get stuck to the brick ballast and only clear

*Scientist Coordinator and Scientist at Rural Building & Environment Division, Central Building Research Inst. Roorkee.

Prototype of the proposed soakage system

water is alowed to flow into the bore hole for fin[al] underground disposal When first compartment ge[ts] filled with ash and silt, the lower mouth of the du[ct] will be closed and water will stop flowing to the seco[nd] compartment This will cause flooding of the first com[]partment and back flow of water indicating that t[he] compartment requires cleaning. The system is reac[ti]vated by removing ash and silt from the fi[rst] compartment.

The bore hole with the help of an augur is mad[e] 30 cm in diameter and is deep enough to reach t[he] first layer of sand subject to maximum depth of [] metres It is also filled with brick aggregate It is pr[o]posed to construct this system in the courtyard [of] house owner so that in case of choking of the cham[]ber, the house owner will have to clean it on his ow[n] to avoid nuisance created by overflowing water

Unlike the existing soakage systems where t[he] ash and silt directly flow into the soakage pit a[nd] cause choking, the proposed system provides for th[eir] retention in ash-silt trap chamber and its subseque[nt] cleaning when the water starts overflowing. The es[ti]mated cost of complete system including the cha[m]bers and bore hole comes to Rs. 150. The rete[n]tion of water in the first compartment and its passa[ge] through brick aggregates filled in second compartme[nt] and bore hole is also expected to reduce the BC[D] before the water reaches the subsoil water level.

A prototype of the proposed soakage system was uilt in the colony of poor people in a village ear Roorkee about two years ago. After its atisfactory performance, four such soakage systems were provided in four different houses in another illage. They are also working without any problem. It is now proposed to construct these soakage systems on large scale in a village near Modinagar in collaboration with Modipon Ltd., under Modi Science Foundation, Modinagar.

The first compartment of ash-silt trap chamber should be cleaned in four months and the brick aggregate of the second compartment, at least once in eight months to avoid chances of any failure of the bore hole.

The proposed soakage system is a small compact unit designed for individual dwelling. This simple technique involves the use of locally available materials and labour. The technique is compatible to the average villager's economic level. The whole system is covered and is below the ground level avoiding any hindrance in movement and chances of mosquito breeding. External source for disposal of waste like river, pond etc. is not required.

The simplicity and low cost of the system, it is hoped, should encourage villagers to adopt it, thereby improving the environmental conditions of the village as a whole. Only an auger for making the bore hole is required and this could be procured by village panchayats or social welfare organisations. □

Electricity for All The Villages By 1995

R. R. Rao*

ALL the 5 lakh villages in India will be electrified by 1995 and about 20,000 solar pumpsets installed in about five years to come, at a cost of Rs. 50,000 each. This was disclosed to newsmen recently by Mr T. G. K. Charlu, Chairamn of the Rural Electrification Corporation.

A record number 13,000 villages were electrified under the REC-assisted rural Electrification programme during 1979-80, inspite of scarcity of various inputs like aluminium, steel and power

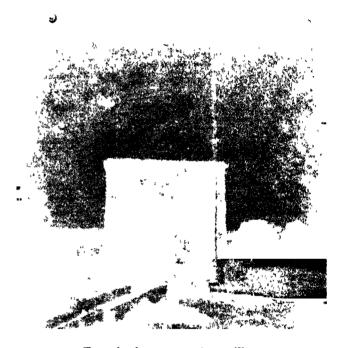
About 1.45 lakh pumpsets, at the rate of 400 a day, were energised in the year, with the financial assistance of the Corporation. About 92 per cent of the target in pumpsets and 84 per cent in the case of villages were achieved. The shortfall in targets is due to shortage of inputs, natural calamities like floods and lack of basic infrastructure in some backward States.

Under the Special Project Agriculture (SPA) programme, jointly financed by the REC, the Agricultural Refinance and Development Corporation and the commercial banks, over 300 projects were approved with the primary objective of increasing agricultural production through large scale energisation of pumpsets.

In the first year of the Sixth Five Year Plan it was proposed to electrify 20,000 villages and energise four lakh pumpsets.

The Corporation earned in 1979-80 a net profit of Rs 5.99 crores against Rs. 4.56 crores in the previous year.

Consultancy services are made available to other countries. According to the agreements reached, the Corporation will provide technical assistance to Algeria and Egypt.

*Our Assistant Editor

Energised pump set in a village

The Corporation has so far sanctioned 3,639 projects involving an aggregate loan assistance of over Rs. 1,284.6 crore. On completion, these projects envisage electrification of 1,75,117 new villages i.e. about one-third of the total number of villages in the country, and energisation of 13,84,262 irrigation pumpsets and 1,79,426 agro-based and small-scale industrial units, besides millions of domestic and commercial connections and street lights in rural areas. The Corporation has already disbursed over Rs. 863 crore for the implementation of these projects which are normally scheduled for completion over a period ranging upto five years.

Upto the end of the this year 72,855 villages were electrified throughout the country under the REC-financed programme of rural electrification. This represents 75 per cent of the phased target. The number of irrigation pumpsets energised increased to over 5.77 lakhs, representing 79 per cent of the phased target. The number of industrial units energised in rural areas with the assistance of REC, increased to over 58,400. □

12 DPD/80—3

Lessons of Maharashtra Job Scheme

A JOINT evaluation of the Employment Guarantee Scheme of Maharashtra was carried out by the Programme Evaluation Organisation of the Planning Commission and the Maharashtra Government. The report on the evaluation has been released recently. The findings are expected to provide a basis for a better appreciation of the concept of Employment Guarantee Scheme and also help the State Governments in the formulation of future national rural employment policy, recently adopted by the National Development Council.

Launched in 1972 and given statutory status in 1979, the Maharashtra Scheme seeks to provide gainful and productive employment in approved works to all unskilled workers in rural areas who are unable to find employment either in farm or in allied operations in the area or on the normal Plan/non-Plan works implemented by the Government through various agencies in the State.

The Scheme at present covers the rural areas of the State and workers residing in municipal areas with population between 8,000 and 13,000. The evaluation study covered broadly three main areas : planning of rural works, organisation for execution of works and response of labour.

The study was conducted in eight Talukas located in Nasik, Sholapur, Beed and Bhandara districts representing Western Maharashtra, Marathwada and Vidarbha regions wherefrom 242 works and 3404 beneficiary households were selected for the study. The sample was loaded in favour of target groups consisting of landless agricultural labourers and smallest size cultivators. The selected households were contacted in four rounds during the period April, 1976 to October, 1978. Also, muster roll abstracts for 25 selected works were obtained from the implementing agencies with a view to studying the behavioural pattern of attendance of workers.

According to the Evaluation Report, a total of Rs. 216 crores had been spent on this scheme from 1972-73 to February 1979. The scheme has been financed by the State by taxes on profession, trade callings and employment, additional tax on motor vehicles, additional sales tax, special cess on irrigated agricultural lands, surcharge on land revenue, and taxes on residential urban lands and buildings under the Educational Cess Act. The State Government had in turn provided a matching contribution to the net collection of taxes and levies every year and credited to a separate fund called the "employment guarantee fund".

Work for Many

The vigorous implementation of the scheme resulted in the generation of 56.27 crores person days of employment. The average wages earned were 18 per cent higher on EGS works than on "other works". In fac 53 per cent of the participating households had co ceded "better wages" as a primary reason for partic pation in EGS works.

Wage disparity between men and women was le in EGS works since wages are paid on the basis (output. There was also a predominance of female part cipation to the extent of 57 per cent in 52 out of 8 selected works in progress, which included special major irrigation works.

About 78 per cent of the selected households ha reported increase in agricultural production to tl extent of 25 per cent due to utilization of EGS asset About 40 per cent of the cultivators had taken (raising of new crops. Thus the Scheme had given thei both technical and economic exposure to achievin higher production possibilities.

In addition, increase in earnings due to utilisatio of EGS assets had enabled the user households ı repay their loans. Out of 480 households repayin loans, 355 could do so on account of increased earr ings from EGS works.

It was observed, according to the Report, that a many as 78 out of 87 selected works of differen categories that were in progress had not been comp leted due to various reasons. These were : uncertaint in the availability of labour on a continuous basi late non-payment of compensation for the land acquir ed for works, and non-availability of equipment lik road-rollers, water tankers, air compressers for irriga tion works and explosive for blasting etc.

Launched in 1972, the Maharashtra Jo Guarantee Scheme seeks to provide gainful and productive employment to all unskilled workers in rural areas.

Poor Maintenance

In overwhelming cases of completed works, neces sary complimentary investment had not been mad in the form of construction of wells, land levellin and land shaping, application of fertilizers and othe essential inputs. This had resulted in the sub-optima use of the potential created. No specific agency seem to have been assigned the responsibility for the follow up, including extension and credit supplies, to realis optimum benefits.

It was feared by several implementing agencies tha in course of time physical condition of works would deteriorate due to lack of maintenance which was the responsibility of Departments executing the work or of Zila Parishads. For want of adequate funds Zila Parishads were reluctant to accept transfer of complet ed works from different agencies.

(*Contd. on page* 14)

Stabilising Kharif Crop Production

A. R. Patel and (Mrs.) Rupa M. Shah*

KHARIF is the most important season so far as food production in India is concerned. Recent research in the area of dry-land agriculture has clearly established that by following appropriate farm-management techniques such as proper preparation of seed-bed, selection of appropriate varieties and so on yields of very high order can be obtained.

Dry farming experts now feel that the weather cannot be held responsible for all crop failures. An analysis made by the scientists of the Sorghum Improvement Project in 1972-73, a drought year, has revealed that jowar yields, for example were affected adversely more by farm management techniques than by paucity of moisture. They ascribe only 20 per cent of the yield variation to climatic factors. The rest is due to controllable factors, such as choice of variety, date of sowing, incidence of weeds, adoption of cultivation practices etc. These conclusions had been further corroborated by the experience in Maharashtra in 1974-75, another bad rainfall year. The scientists therefore suggest that the first step in improving dry farming is to replace the traditional crop varieties with high yielding strains of appropriate maturity periods. During performance tests, some of the strains had out-yielded the established local varieties by 50 to 80 per cent. Apart from judicious selection of crops, various other factors also help in boosting yields and providing reasonable insulation insurance against weather abberations. Some of these factors are: proper preparation of the seed-bed, timely sowing, use of manures and fertilisers, control of pests and diseases, and adjustments in crop plans to suit the season which are as useful for irrigated areas as for dry lands.

Climate

The analysis of the climatic parameters reveals that there are four important variations in the behaviour of the monsoon rains in the country, namely, (i) commencement of the rains may be quite early or considerably delayed, (ii) there may be long 'breaks (in July or August)' (iii) the rainy season may end considerably earlier or, (iv) the rainfall may be unevenly distributed in space and time, being excessive in one part of the country and deficient in another, and/or excessive in one part of the season and deficient during another.

Various varieties of the crops, different cropping patterns and the techniques of cultivation are therefore being evolved at the ICRISAT, Begumpet (A.P.) and other centres to tide over these variations and ensure minimum economic net return in the dryland areas.

Cropping Patterns

Under 'crop cafetaria' many crops were tried. They included millets (bajra and sorghum), pulses (arhar and mung), fodders (Jowar and cowpeas) and some commercial crops (castor, soyabean, guar) in Kharif season. Among the Kharif crops, castor gave the highest profit of Rs. 2250 per hectare. Arhar with a net return of Rs. 2245 was equally remunerative. The transplanted crop of bajra yielded a handsome net income of Rs. 1405.

However, the choice of crops, crop varieties and crop sequences to fit to the climatic parameters of a situation, is key to success in rainfed farming. In the wake of the crop improvement programme launched by the ICAR, plant breeders have evolved many high yielding, short duration and photo-insensitive crop varieties which are suitable for dryland conditions. Change in the geometry of the crop is also essential for increasing the efficiency of the conserved moisture. Sowing the crop in furrows and leaving ridges in between the furrows, making raised beds and depressions by scooping the soil and sowing in the depressions are being tried. The bajra crop can be grown on raised seed-beds (with ditches in between) as a transplanted crop. This would provide a better rooting medium, better drainage and aeration for the bajra crop and more importantly to divert, collect and conserve all excess rainwater in the ditches for growing a second crop on this land in the rabi season (sarson or taramira). With the introduction of high yielding varieties and change in the breeding concept to evolve varieteis suited to dry farming areas, the crop-productions aptly suited to different local agro-climatic conditions have been evolved and recommended by the dry-land research centres and many more are being experimented.

Can weather be blamed for all crop failures? According to an analysis made by the research scientists of the Sorghum Improvement Project during a recent drought year, crop was affected adversely more by faulty management techniques than by paucity of moisture.

Plant Population

The crop production strategy envisages the need for adequate plant population per unit area. This strategy brings down the cost of production. In case of rice, the emphasis is on ensuring the good stand of the crop and proper plant population. In the areas where the rice transplanting is already popular, they should promote timely planting so that the crop ripens by the

* are with Bank of Baroda, Central Office, Bombay.

end of October and can be harvested before the temperature starts falling. This will facilitate the cultivation of second crop in the rabi season.

The scheme for raising community nurseries of paddy which was hitherto confined primarily to the eastern States to facilitate early sowing and mitigale flood damage, has now been extended to other States.

Scientists suggest replacement of traditional crop varieties by high yielding strains of appropriate maturity periods.

In the case of jowar, the second major grain Kharif crop sown over 17 m hectares, the stress is on popularising hybrid varieties. A short-duration hybrid variety CSH-5 has proved very successful in Karnatak, A.P., Maharashtra, Rajasthan and other States. It has given substantially higher yields than the traditional varieties and escaped midge attack.

Fertilisation

In the past, application of fertilisers was considered to be luxury in dry farming and was thought ineffective because of want of moisture in the soil. Techniques are now developed whereby efficient use of fertilisers can be made. The present varieties respond very well to fertilisers. Two efficient methods of fertilisation are through (a) placement below the soil 5 cm away and 5 to 7 cm deep from seed and (b) foliar application. Results obtained at the IARI have shown that bajra yield of 20 quintals per hectare was increased to 30 quintals per hectare when fertilised with 40 kg. N/Ha. Similarly maize yield of 5 quintals was raised to 28 qnintals per hectare by application of 40 kg. N/ha. Arhar crop responded to the application of phosphorus. Application of 100 kg-P_2O_5/ha gave yield of 28 quintals per hectare as compared to 12 quintals per hectare from unfertilised plots. The new crop varieties not only respond to the amount of fertiliser but also to the techniques of fertiliser-application.

Soil Conservation

Soil conservation is the basic need in these area and without bunding, levelling and other protectiv practices, permanent system of agriculture cannot b established. There are several methods of soil an water conservation : (i) mechanical measures or bund ing, terracing, contour listing, contour tillage, mulchin etc. (ii) agronomic practices like strip cropping, con tour farming, lay farming, stubble farming etc. In dry land farming the soil moisture storing capacity is con sidered most important. In the new technology mecha nical and occasionally chemical manipulation of so is sought for, to increase its rainfall absorption capa city and moisture retention character for successfu crop growth. Optimum effective rooting depth of so is therefore very much desirable. When the rooting are and moisture storage capacity of some soils are re tricted to less than 15 to 20 cm. soil depth posin serious problems, the layer has to be loosened so th the greater soil volume becomes available for ro growth and moisture storage. This is done by dee ploughing through tractor or chiselling equipments.

Deep ploughing and sub-soiling in areas where th subsoil has a highly compacted zone to make the sul soil pervious to water and root penetration, surfa hoeing to reduce evaporation, seems to be advanta eous for capturing most of the rain water and stori it for the crop growth. Compaction of the soil betwe the rows or use of asphalt, bentonite, etc., for maki the subsoil impervious are other promising techniqu for moisture conservation in sandy and highly perm able soils which suffer from too much permeability

Thus, crop-planning exercise involving farm-pla ning and budgeting aspects has proved that crop-pr ductivity and ultimately crop-production can be i creased significantly. This exercise helps farmers ove come the natural/climatic hazards since manageme aspects are responsible for increasing or decreasi crop-productivity to the extent of 80 per cent. rath than vagaries on monsoon. □

Maharashtra Job Scheme

(*Contd. from page* 12)

The landless agricultural labourers who did not participate in the programme were essentially those living hard to mouth and could not afford to wait for the wages to be paid after a week, 10 or 15 days of their participation of EGS works. Despite knowledge of better wages on these works, says the report, a view has to be taken whether a shift in policy is called for on the part of the State Government to encourage better participation from this section of target group.

It was also observed, says the Evaluation Study, that benefits of the assets created by the EGS works, hand to mouth and could not afford to wait for the farmers. The small and marginal farmers constituted only 21 per cent of the user households.

Other major findings of the Report are : (1) There was greater increase in employment on part-time jobs than in full employment, (2) In the case of works contributing to the productivity of land, vi irrigation, soil conservation, land development, affor station etc., the proportion of expenditure incurred w 93 in 1974-75 but subsequently came down to in 1978-79, (3) The pace of expenditure on wor which were taken up under the scheme at vario times was quite slow. Out of 1163 works start 273 had continued for more than a year. In case 60 per cent of these works not even half the expen ture had been incurred, (4) The Scheme had help in breaking down caste barriers since all rural work worked together on a project irrespective of caste religious affiliations. Besides, multiplier effects investment on EGS works are important since it h provided permanent employment creation and incre ed agricultural production through various irrigat and soil conservation works. This had also helped introducing new remunerative crops □

Sericulture : Performance and Prospects

Dr. Badar Alam Iqbal*

IN India, sericulture can be broadly classified into mulberry and non-mulberry. Mulberry silk is manufactured in organised sector constituting about 84 per cent of the total natural silk production. The non-mulberry silk consists of tassar, eri and muga. India is the only country in the world which produces all the four commercially known varieties of natural silk.

With an output of 3,300 tonnes of mulberry silk and 425 tonnes of non-mulberry silk in 1978-79, India ranks fifth in respect of mulberry silk production and second in tassar production in the world, constituting 5 per cent and 10 per cent respectively of total world production. Sericulture is a labour intensive industry. Besides generating employment, it can also help in earning valuable foreign exchange. Its exports have already crossed Rs. 44 crores.

The sericulture has many good points. Firstly it is not capital intensive. It requires a small capital of Rs. 500 to create one job. It can yield good results too. For example one hectare of land under jute yields Rs. 3,837, paddy Rs. 4,056 and wheat Rs. 1,280. The same land nets annually Rs. 15,750 under mulberry. One hectare of mulberry cultivation gives employment to 12 people and earnings per hectare are twice as much as from jute and rice. Many cultivators have already switched over to sericulture replacing jute in West Bengal, Cotton in Tamil Nadu, grapes in Andhra Pradesh and sugarcane in Karnataka.

Production

Sericulture is mainly located in Tamil Nadu, Karnataka, Uttar Pradesh, West Bengal, Andhra Pradesh, Assam, Bihar and Jammu and Kashmir. The State Governments concerned have taken several steps for its development especially that most of it is confined to the handloom sector. In 1978-79 the total production of raw silk was 3,725 tonnes. Raw silk production is confined mainly to the states of Karnataka, West Bengal and Jammu & Kashmir, which together constitute bulk of the country's mulberry production. Tassar silk is largely produced in Bihar, Madhya Pradesh and Orissa. Assam acounts for major share of the output of eri and muga silk.

The total output of mulberry silk has gone up by more than 137 per cent between 1963-64 and 1978-79, whereas the total production of non-mulberry silk has declined by 25 per cent during the same period. Added to this, the annual output of mulberry silk waste is nearly 1,100 tonnes, while the annual production of non-mulberry waste is around 2,700 tonnes. The value of sericultural goods at the current prices is nearly Rs. 150 crores. According to an estimate, the production of both the mulberry and non-mulberry silk would be 7,500 tonnes by the end of Sixth Plan.

Employment

The second aspect of sericulture is its employment potential. It is one of the agro-based industries, which have labour intensive character. It offers vast scope for employment to the rural masses. It has also the potential to provide regular income to rural poor. Sericulture at present provides livelihood to nearly 38,00,000 persons Out of these, more than 10,00,000 people belong to the backward classes. According to an estimate 4,00,000 additional jobs would be generated during the Sixth Five Year Plan.

Karnataka ranks first, accounting for more than 52 per cent of the total employment in sericulture industry. North-eastern states come next to Karnataka constituting nearly 11 per cent. while West Bengal holds third place with 10.4 per cent, followed by Assam and Bihar. Madhya Pradesh and Jammu & Kashmir have a marginal share in the total employment. This all reveals that Karnataka is the only state where sericulture is flourishing and the state Government is paying added attention on the development of sericulture, while the Governments of other States are not playing any significant role in the development of such a labour intensive industry. Thus, the need of the hour is that the Central Government as well as State Governments must pay due attention to its development, which can offer vast scope of employment opportunities and would reduce the existing unemployment to a large extent.

India is self-sufficient in silk yarn twisting capacity having nearly 1,50,000 spindles. Silk weaving is only confined to handlooms and 1,40,000 handlooms as well as 40,000 powerlooms are in pure silk weaving. Uttar Pradesh holds first place having 80,000 handlooms. Tamil Nadu comes next followed by Assam.

Export

Sericulture can also help in earning valuable foreign exchange. Considerable progress has been made in the export of silk goods. In 1979-80 foreign exchange earnings from silk products touched an all-time record figure of Rs. 50 crores.

The export earnigs from silk goods have gone up by more than 2400 per cent between 1963-64 and 1979-80, while India's total export earnings went up by more than 667 per cent during the same period i.e. from Rs. 795 crores to Rs. 6100 crores. This shows that the rate of increase in the export earnings from silk goods is more than 3.5 times higher than the rate of increase in the export earnings from all commodities. The share of silk goods export has increased

*Lecturer, Faculty of Commerce, Aligarh Muslim University, Aligarh.

from the lowest point of 0.25 to 0.81 per cent i.e. a rise of 0.56 per cent during the 16 years to 1979-80. Sericulture, thus, has bright prospects. This is further expected that the export earnings from sericulture would reach an all-time high figure of Rs. 100 crores by the end of Sixth Plan. This significant rise in export is mainly because of the spurt in international demand. There is also a phenomenal rise of nearly 27 per cent in the unit-value realisation. The developed nations consume nearly 90 per cent of world's raw silk output. West Germany and the USA are the two largest importers of Indian silk goods. These two countries imported silk goods worth Rs. 5.9 crore and Rs. 5.4 crores respectively. Other major importers are Malaysia, Saudi Arabia, France, Italy and Switzerland, Item-wise, silk sarees are the leading item of exports bringing in foreign exchange worth Rs. 7.9 crores. Dress materials come next amounting to Rs. 7 crore. Ready-made garments hold third place accounting for Rs. 5.2 crore. During 1978-79, the exports of dress materials and ready-made garments increased by 53 per cent and 92 per cent respectively.

Indian handloom silk fabrics have been enjoying duty free entry into European Economic Community (EEC) against annual quota ceilings. The duty quota for the year 1979-80 has been fixed at 22,00,000 units of account. Switzerland also followed quota system. Despite certain ceilings on quota, and certain other restrictions at the international level as well as tough competition with other nations, there are still vast prospects for increasing silk goods exports.

To ensure orderly development of exports, certain steps have to be initiated and implemented. One of the important steps is the pre-shipment inspection of natural silk goods. The Central Silk Board conducts inspections and issues certificates for cash compensatory suuport and certificates needed under GSP in which raw silk has been included. There is a cash compensatory scheme under which compensatory support is available to the extent of 10 per cent of the f.o.b. value on exports of natural silk fabrics and 15 per cent of the f.o.b. value on export of natural silk ready-made garments. This should be increased to the extent of 12 per cent and 17 per cent respectively.

If India wants to compete with other rivals such as China, which holds first place in tassar silk, and South Korea, it is essential to keep vigil on quality front, because demand in developed nations is confined to quality silk which alone could be processed on the sophisticated weaving machinery.

Constraints of growth

Like other industries, sericulture also faces certain major constraints like supply of seed and other inputs, financial accommodation and marketing. Marketing is one of the most important handicaps which stands in the way of development. Price stabilisation and procurement schemes have been implemented by the CSB. Though these have imparted a measure of stability in the market, there is still need to improve structure of marketing as uneconomic prices adversely affect primary producers who largely belong to backward areas. Research is another factor which needs concerted efforts, especially to solve the problems of high cost of cocoon output as well as inferior quality of raw silk. A network of research stations and centres is essential in a state particularly for developing new strains of mulberry and to control pests. It is appreciable that in areas where pests have been controlled and improved rearing techniques have been adopted, the cost of cocoon has declined considerably to Rs. 12.20 per Kg. instead of Rs. 16.60 per kg.

For rapid development of sericulture many developmental schemes and programmes have been implemented such as Intensive Sericulture Development Programme (ISDP). The small and marginal farmers including scheduled castes and scheduled tribes, who are finding sericulture a paying occupation, are expected to get benefit from the various programmes sponsored by both Central as well as State Governments. In 1978-79 the sericulture developmental schemes and programmes in concerned states included 197 agricultural schemes involving outlay of nearly 8 crore. These schemes covered a wide spectrum including development of melberry, tassar and muga silk rearing and reeling and spinning of silk, research, training and marketing, effective supply of cocoon seed and nurseries. The initiation of Intensive Sericulture Development Programme (ISDP) has helped in strengthening the infrastructure for silk rearing...... training rearers and reelers, assured supply of mulbery cuttings and disease free seeds, obtaining technical know-how and enlarging the markets. All these schemes require huge finance. In this regard commercial banks are playing a positive role by making available credit at concessional rate. These banks are also providing finance for the construction of rearing houses and purchasing of appliances.

The developmental schemes and programmes of sericulture have shown good returns. Nearly 132 nurseries are functioning for the purpose of supply of mulberry saplings and cuttings of improved varieties. The acreage under mulberry silk has also gone up considerably i.e. from 1,30,095 hectares to 1,40,633 hectares in 1978-79, showing an over-all rise of more than 7 per cent. Similarly, the yielf per hectare went up to 24 kg per hectare from 10 kg per hectare i.e. an increase of 140 per cent during the same period. This means that the rate of increase in yield per hectare is much higher than the rate of increase in the area under cultivation. However, it is still low in comparision to 73 kg per hectare in South. Korea. Output of mulberry reeling cocoons has also gone up from 4,65,00,000 kg. to 4,90,00,000 kg. Likewise, mulberry silk rearing has been extended to certain new areas providing livelihood to a considerable number of persons belonging to rural areas.

In India 239 basic seed farms and Government grainges are operating. Besides many more seed farms are also functioning in the private sector. Added to this, 79 silk farms and grainages have also been organised by the CSB under ISDP. There is also fast extension in new areas so far as tassar cocoons are concerned and 89 tassar seed supply centres and subcentres are functioning in different states of the country. States Governments of Madhya Pradesh and Orissa have established 28 and 8 pilot stations respectively for the supply of tassar silkworms to farmers in their respective states.

From the above discussion, it emerges that by and large, sericulture is an occupation that can be undertaken on a small scale and by persons with limited means as allied activity. It is suggested that both Central and State Governments should pay more attention to the development of this potential industry. ☐

TRENDS

Social Objectives of Private Sector Growth

WITHIN the framework of the Sixth Plan considerable scope existed for expansion of industries in the private sector if it subserved, the broad social objectives. This was stated by Shri Narayan Datt Tiwari, Union Minister of Planning and Deputy Chairman of the Planning Commission, while addressing representatives of trade and industry recently in New Delhi.

Outlining the social objectives, the Minister said, particular attention would be given to the promotion of cottage, village and small industries with a view to generate more employment opportunities. It was also to be ensured that there was a measure of regional balance so that the benefits of industrial development percolated to various parts of the country.

Shri Tiwari also said : "Whether it be in the small or large sector, however, the optimum utilisation of resources and a substantial improvement in productivity should be a vital concern so that the benefits from investments already made are maximised. In turn, this would call for renewed emphasis on improvement of skills and technological upgradation of our industrial structure. Research and development within industry must find a greater sense of priority than hitherto."

The Minister added that the additional resources required for the investment envisaged in the Plan would have to come in a substantial measure from the surplus generated within the industrial sector. Approximately 80 per cent of the Government revenues were derived from indirect taxes, the bulk of which was accounted for by industrial products. Buoyancy as well as quantum of Government revenues was thus dependent on the level of industrial growth. The growth of industrial production in the last decade had averaged around 4 to 5 per cent only. In 1979-80 industrial production actually declined by 4 per cent. We are not securing the benefits from the substantial investments made in the industrial sector. Capacity utilisation and productivity have generally declined.

Emphasis on Science & Technology in Sixth Plan

"THE present Sixth Plan frame hopes to assist those sections of population who are totally resourceless. One of the schemes is the National Rural Employment Programme and another is Operation Flood II which will be extended to cover 15 million people. The frame gives considerable emphasis to science and technology which, it is hoped, will permeate and subserve every sector of the national effort. Some of the proposals to induct scientists into a closer collaborative relationship with development agencies are contained in the Plan frame. In the Minimum Needs Programme, particularly innovative work in taking health to the people has been done by one of the invitees to this meeting. We look forward to gaining fresh insights into this vital area. The only way to deliver the benefits of many technologies and activities which have a minimum viable level, is to organise new forms of community and collective endeavour."

The Union Minister of Planning and Deputy Chairman of the Planning Commission said this while addressing recently a group of social scientistis, agricultural and rural development experts and scientists.

Development of Employment and Training Services

The State Labour Ministers have agreed to strengthen the infrastructure of employment and training in the meeting of the Standing Labour Committee which concluded in New Delhi recently.

The Labour Ministers identified a variety of sectoral programmes including the expansion of capacity in steel, nonferrous metals, capital goods and so on. They agreed to dovetail into their State Plan schemes for the extension of employment exchanges facilities to the rural areas and to the extension and diversification of training facilities to make training accessible to the rural unemployed and the self-employed. Suitable schemes of "earn while you learn" and "learn while you earn' will also be included in the State Plans.

Miltone The Popular Beverage

MILTONE, a milklike nutritious beverage is becoming more and more popular in India. Based on a process developed by the Central Food Technological Research Institute and promoted by the Food and Nutrition Board of the Union Food Department, the beverage consists of fresh milk and proteins isolated from groundnut flour. It is already being utilised in sponsored feeding programmes in several States.

The Food & Nutrition Board has finalised a scheme to set up Miltone production units in as many cities as possible during the current Five Year plan period. Two plants have already been established during the last plan period in Bangalore and Hyderabad. The third plant has just been set up at Kanpur. Two more units at Ranchi in Bihar and Calcutta in West Bengal are expected to be set up in near future.

Govt. to Promote Growth of TUs

THE Union Government's labour policy lays accent on the growth of healthy and strong trade union movement. Organisations of workers and employers are proposed to be closely associated with the planning and evlauation of labour policy.

An outline of the policy was approved by the standing committee of labour ministers which held a two-day meeting in New Delhi recently. ☐

Thatches Catch No Fire

Dr. J. P. Jain, R. P. Kulshreshtha,
N. K. Saxena and Ilam Singh*

A fire retardant and water-repellent thatched hutment.

The thatched huts in the rural and slum areas are liable to be destroyed by fire as the thatching materials are highly combustible. The Central Building Research Institute ,Roorkee has developed three methods for fire protection of thatched roofs. This article discusses one of the methods dealing with the preparation and application of fire—retardant and water-repellent thatch using only the conventional technique of making thatch roofs.

TO minimise the risk of fire in villages, the Central Building Research Institute, Roorkee has developed a simple fire-retardant treatment for thatches. The Institute, has developed three methods for fire protection of thatch roofs. The first method, employing chemical impregnation followed by surface treatment was effective, but costly. A second method was developed based on a new technique of making rolls of reeds and fixing them on a bamboo frame for making thatch. Though this method was found satisfactory, it involves a non-conventional and more labour-consuming process due to which it could not be easily adopted in the field. The third method involves preparation and application of fire-retardant and water-repellent thatch using only the conventional technique of making thatch roofs.

Preparation of Thatch

A frame of bamboos of approximately 5 cm. diameter prepared by placing them across each other at about 30 cms. spacing. For a frame of half split bamboos of 5 cm. diameter approximately the spacing should be 15 cm. The frame is tied up with sutli or any other thin but strong string.

Reeds, rice paddy, coconut leaves or palmyrah leaves are evenly spread on the frame and tied up firmly with the help of a long needle in a conventional manner.

The thatch is mounted on mud walls or on wooden poles and tied with the structure at different points to hold it firmly.

About 1.8 Kg. of wheat straw or 5 cm. pieces of rice paddy is mixed with every one cft. of soil (from ponds) and kept wet for a week and kneaded daily. This ensures proper rotting of wheat straw or rice paddy and increases its workability.

*are with Central Building Research Institute,Roorkee.

A cut back (solution) is then prepared by mixing bitumen 80/100 grade and kerosene oil or diesel oil in the ratio 5 : 1.

For 1.8 Kg. cut back, 1.5 Kg. bitumen is melted and poured into a container having 300 ml. kerosene oil or diesel oil and stirred constantly till all the ingredients are mixed.

For every 1 cft of mud. 1.8 kg. cut back is added and mixed thoroughly by turning over the mud with spade and kneading it. This mud paste (mortar) is ready for plastering the thatch.

It is applied on the top and bottom surface of the thatch with hand or trovel. The mud plaster on top and bottom surface should be 20 mm. to 25 mm., and 10 mm. thick respectively. It is then allowed to dry.

If, on drying some cracks are developed in the mud plaster these may be sealed off with the same bitumenized mud mortar.

Preparation and Application of gobri

One part of cow dung (gobar) is mixed with one part of soil by volume with sufficient water and mixed thoroughly to make a thin paste. Two coats of this thin paste are applied on top surface of dried mud plastered thatch and allowed to dry. It is necessary to apply the same gobri on the bottom surface of the mud plastered dried thatch in order to fill the cracks which are developed during the drying of the mud plaster. After this, two coats of water-proofing solution are applied as given below.

Water-proofing Treatment

To prepare a water proofing solution one part of hot melted bitumen is mixed with two parts of kerosene oil or diesel oil and stirred. A coat of this solution is applied by brush on the top surface of a thatch It is allowed to dry for four hours and then another coat of the same solution is applied.

The thatch roof thus made, is fire-retardant and water-repellent. To give a good appearance to the top surface of the thatch roof, which becomes black due to bitumen, a coat of ordinary gobri or white wash may be applied. For whitewashing the roof top, a quick lime emulsion is prepared with quick lime (One Kg.) and animal glue (70 gm.) dissolved in (½ litre) boiled water. Quick lime is decanted or sieved and 14 per cent animal glue solution is added till brush consistency is achieved. If necessary more water can be added. Two coats of this lime wash emulsion are applied on the black surface of the roof.

Performance

Fire retardant and water-repellent thatches prepared as above were tested according to BS : 476-Part 3 in the External Fire Exposure Roof Test Apparatus. All the treated thatches (coconut, palmyrah, rice paddy, reeds etc.) are found to be in the Grade AA which implies that the thatches are safe at least for one hour of fire duration.

A model thatch of 9 sq. m. size was made and subjected to water spray test for a period of six months. It was found that no erosion and no leakage took place in the thatch.

The model thatches of all types i.e. palmyrah leaves, coconut leaves, rice paddy thatch, reeds thatch etc. were made fire-retardant and water-repellent. These thatches were subjected to natural weather test for the past three years. It has been observed that there is no leakage of water, no cracks are formed and the surface remains smooth. Thus the thatch treated as above

A thatch roof in the making

becomes not only fire-retardant but also water-repelle[nt] and there is no effect of wind too on the treat[ed] surface.

Advantages

The above techniques mitigate the fire risk and e[n]hance the life of thatch to about 6 to 8 years. N[o] skilled labour is required for this treatment. The to[tal] cost of this type of thatches works out to be appr[ox.] Rs. 18 per square metre.

Houses For The Poor

G. Satya Rao*

THE Andhra Pradesh government had helped building of over three lakh houses in five thousand new colonies all over the state for the weaker sections of people in one year. This is part of a very ambitious programme launched by the State Government to build, in a period of three years, twelve lakh houses, on house sites given to the poor people.

The 'Directorate of Weaker Sections Housing Schemes' an exclusive organisation created to undertake this programme, exceeded the target of 2.5 lakh units and helped construction of 2.75 lakh houses in the First year. Encouraged by this the government had set a target of three and half lakh units this year.

It is proposed to complete the balance of six lakh houses next year, so that all the twelve lakh families who were earlier given sites are provided with their own houses. The State Government under the 'Sites and Services Programme' envisages the provision of complementary facilities like levelling of house sites, forming of approach roads, drains, drinking water, street lights, besides assisting in the very construction of the houses themselves. Under the programme, the beneficiary is given Rs. 200 as cash grant for purchase of building materials and Rs. 200 as labour component under food for work programme. The Forest Department helps them in getting bamboos and ballies at concessional rates. Though all this is in the nature of promotional incentives, most of the beneficiaries had pooled their meagre resources a[nd] improved their houses.

Under the rural permanent housing programme t[he] subsidy remains the same at Rs. 400 whether the uni[t is] estimated to cost two thousand or four thousand rupe[es.] Half of it is secured as loan from the HUDCO [and] General Insurance Corporation. The beneficiary [is] meeting the balance of Rs. 600 or Rs. 1600 from [his] personal resources. Under this, 52,000 houses are [in] different stages of construction.

There is another category of houses coming up al[ong] the coastal belt in Nellore and Prakasam districts wh[ich] were devastated by the severe cyclone last year. [A] number of voluntary organisations had come forw[ard] to participate in this programme. While the loan amo[unt] is provided by the HUDCO and Life Insurance C[or]poration on the same pattern of rural permanent ho[us]ing programme, the balance is contributed from [the] Chief Minister's Relief Fund, by the voluntary Org[ani]sations and others. In addition, the UNICEF had [pro]vided Rs. 40 lakhs to implement community impr[ove]ment programme to benefit the women and chil[dren] in these new colonies, with over 12,000 houses.

Urban Housing Programme is taken up with HUDCO assistance. This is generally dovetailed [with] environmental improvement programme for impro[ving] the urban slums. This new programme had cov[ered] almost all smaller towns also, and 54 housing sche[mes] for a total of 20,000 houses at a total cost of a[bout] Rs. 15 crores are under implementation. It is a m[atter] of great satisfaction that Andhra Pradesh sec[ured] assistance from the HUDCO for 54 schemes out [of a] total of 308 approved by the HUDCO throughou[t the] country. □

*AIR Correspondent, Hyderabad.

Dr. Anil Sadgopat *Smt. Jaishreeben Raiji* *Smt. Kamalabai Hospet*

Jamnalal Bajaj Awards-1980

GANDHIJI held that, as a social being, it is man's supreme duty to use all his talents, not exclusively for personal aggrandizement but for the good of all. No doubt, Government has been doing its best to improve the lot of millions of poor Indians living in villages. But individuals and institutions have a major role to play in the creation of Ram Raj. Some of them who have dedicated their lives for the betterment of the downtrodden have been selected for the Jamnalal Bajaj Awards for 1980. Here is a short write up of the four winners of the awards.

Gandhiniketan Ashram

Gandhiniketan Ashram which was selected for an award of Rs. 1 lakh for outsanding contribution in the field of Constructive work was founded in April 1940 at Kallupatti in Madurai District by Shri G. Venkatachalapathi, who was greatly inspired by Gandhiji.

Upto the attainment of Independence in 1947, Gandhiniketan functioned more as a centre of political activities side by side with constructive work. During the Quit India movement most of the inmates of the Asram courted imprisonment.

After the attainment of Independence Gandhiniketan took up various items of constructive work in a systematic manner and enlarged the scope of its activities. A Khadi Mahavidyalaya was started at Gandhiniketan. More than 300 Block Development Officers, 100 Revenue Divisional Officers and 200 area organisers from all over the country were trained in Gandhian techniques for rural development at this institution. Ten rural textile centres have been established by Gandhiniketan, and it produces about Rs. 8 lakh worth of Khadi every year.

Gandhiniketan has also a number of other productive units like hand-made paper, pottery, NEO soap bee-keeping, palmgur, fibre flaving, tanning and leather goods manufacture. The various units employ about 100 skilled and unskilled workers and fetch an annual income of about Rs. 12 lakh.

For over 500 years, about 100 families of Pranmalai Kallars and Pertakattalai village in Sedepatti Block had been depending mainly on thieving for their livelihood and had been declared as a denotified tribe by the British. By repeated appeals, the Ashramites were able to persuade these people to give up their age-old traditional habit by offering them alternative sources of income through agriculture. Another village called Chatirapatti which was faction-ridden stands united today due to the efforts of the Ashram workers.

A basic school founded in 1946 is functioning as a Higher Secondary School with dairying and dress-making as vocations. On its rolls are 1200 students and 45 teachers. The primary school of the Ashram has 850 students and 25 teachers.

The Ashram has established a college of Gandhian Thought affiliated to Madurai University. Special courses of 42 days duration are also conducted for the graduates and post-graduates to initiate them into Gandhian techniques for the establishment of peace and harmony among the intelligentsia and the illiterate. Several Government servants also attend these courses. Gandhiniketan also arranges Pada Yatras for the propagation of Gandhian way of life.

Until recently, the services of the Harijans were not utilised by the other communities in the neighbouring villages. As a result of the persuasive efforts of the Ashram workers, Harijans are now employed by the other communities to assist them in their agricultural operations. The Ashram workers also undertake pada yatras periodically to persuade the villagers to give up drinking. Their efforts have been successful to a large extent.

In short, Gandhiniketan has not only established a model centre of constructive activities at the Kallupati Ashram for the benefit of the local population, but has carried the message of Gandhiji to the neighbouring areas through a large number of gram sevaks and

others whom it has trained and inspired to devote themselves to the service of the weaker sections of society.

Dr. Anil Sadgopal

Dr. Anil Sadgopal has been selected for an award of Rs. 1 lakh for pioneering research on the application of science and technology for rural uplift. He has a M.Sc. in Plant Physiology from the Indian Agriculture Research Institute, New Delhi, and Ph.D. in Bio-Chemistry from the California Institute of Technology, USA. Dr. Sadgopal is the Founder of Kishore Bharati, Hoshangabad, (M.P.) and the moving spirit behind this group. He devoted his life for the improvement of the living conditions of the people in the villages. He was able to inspire about a dozen other young scientists of high academic qualifications and diverse professional background to join hands with him in the venture.

Kishore Bharati is a voluntary organisation and was registered as a society in 1970. It started its working in 1972 after intensive preliminary field surveys in rural education, agriculture and cottage industries, with its headquarters at Malhanwada in Hoshangabad District.

An important and salutary principle adopted by Kishore Bharati from the outset is that all resources for its work, financial as well as human, shall be raised from within the country. No help of any kind from any foreign agencies or donors will be over sought or accepted.

The system adopted to impart science education to school children, which has come to be known as *Hoshangabad Vigyan*, was to give up the traditional method of learning by rote and placing emphasis on 'learning by discovery' by performing simple experiments to illustrate scientific phenomena. The Madhya Pradesh Government permited the experiment to be tried as a pilot scheme in 16 village middle schools in Honshangabad district. and it was launched in 1972 by Kishore Bharati in collaboration with the Friends Rural Centre, Rasulia.

The scheme was so novel in its approach and yet simple in its execution, that it attracted wide attention among scientists and educationists from several insitutions far and wide such as the All India Science Teachers Association. Delhi University, T.I.F.R. and IIT's besides several post-graduate colleges in Madhya Pradesh, who voluntarily started taking keen interest in it and actively participating in its programmes.

The experiment proved so successful during the seven years of its working that the Madhya Pradesh Government decided to adopt it in all the 250 middle schools in Hoshangabad district.

The drop-out rate in village middle schools is about 60 to 70 per cent. In order to help them as well as other youth and adults, Kishore Bharati has evolved a non-formal education programme. Built round such relevant activities as farming, irrigation, cattle-breeding and cottage industries, it aims at enabing the weaker sections of society, the landless labourers and the marginal farmers to acquire the skills and attitudes necessary to improve their own lot.

Side by side with these educational programmes, all these years Kishore Bharati has been carrying on research through experiments on the application of Science and Technology to rural development in all its aspects—agriculture, horticulture, irrigation, composting, animal husbandry and cottage industries. The aim is to make available to the farmers the results of the research to train them in making their agricultural operations more productive and profitable.

Dr. Anil Sadgopal is still the moving spirit and inspiration behind the Kishore Bharati group. His wife, Dr. Mira Sadgopal, M.B.B.S., has been one of his co-workers for the last 5 years.

The third cash award of Rs. 1 lakh, newly instituted in momery of Smt. Jankidevi Bajaj goes to Smt. Jaishreeben Raiji, and Smt. Kamalabai for outstanding contribution to women's uplift, children's welfare etc.

Smt. Jaishreeben Raiji

Smt. Jaishreeben Raiji was born in Surat on 26th October, 1895, entered public life and started her social and political activities at a very young age. In 1920 she became a founder-member of the Bhagini Samaj, Bombay and was its President for 11 years, from 1933-1944.

A monumental work to her credit has been the development of the Adivasi Welfare Centres, Udwada, (Valsad District) in Gujarat, over the last 35 years The Udwad Centre started in 1940 has developed into an education and cultural centre which caters to the needs of more than 600 girls providing them educational facilities right from pre-primary school to post-SSC teacher training.

An ardent follower of Mahatma Gandhi and Congress worker, Smt. Jaishreeben participated in the freedom struggle in 1930 during the Salt Satyagrha. She organised the Congress Mahila Vibhag, Bombay, and was its President for many years. She was also imprisoned during the Quite India Movement in 1942.

Smt. Jaishreeben had been a Member of Parliament from 1950-57, taking a leading part in passing important social legislation such as the Hindu Code Bill and the Suppression of Traffic in Women and Children. She sponsored the Dowry Restraint Bill and Indian Adoption of Children Bill.

She was the chairman of the Maharashtra State Women's Council and the United Women's Organisation and she has been an active member of the Vanita Ashram Executive Committee and has been a patron of All India Women's Conference. For many years she has been a member of the Indian council of Child Welfare, Maharashtra, and the Bombay Vigilance Association. She represented India as a delegate to the International Conference of Social Work in Toronto in 1954. She has also been connected with the Moral and Social Hygiene Association.

Today, at the age of 85, Smt. Jaishreeben's interest has not flagged and her energies are abundant. Her latest project has been in collaboration with the S.N.D.T. Women's University for the adoption of about twenty villages around Udwada where work is being carried on for an Integrated Rural Development Programme. Her mission is to make Udwada a centre of development for the under-privileged.

Kamlabai Hospet

Born in 1896. Kamalabai Hospet was married at the age of thirteen but two years later she lost her husband. Undaunted by the calamity and in order to make herself-reliant, she enrolled as a trainee in the Dufferin Hospital, Nagpur and qualified herself as a nurse and midwife. An incident that occured during her training left a deep scar on her soul and led to a new direction in her life.

The Sitabuldi Maternity Home came into being on 8th May, 1921 with only five beds to begin with. Today it has grown into a full full-fledged hospital for women and children with 150 beds, offering all modern facilities such as operation theatre, X-ray equipment and pathological laboratory. She established 20 branches in the rural and urban areas of the then CP and Berar Province where thousands of deliveries were conducted and many widows were employed as nurses and midwives.

The Constiution of the Sitabuldi Nursing Home was changed in 1954 and the Matru Seva Sangh, with broader objectives, was established to widen the scope of its activities. The golden jubilee of the Sangh was inaugurated by Smt. Indira Gandhi in October, 1972.

In 1961 the Matru Seva Sangh diversified into other fields of activity. A day school, called Nandanwan was started for mentally retarded children of the age group of 6 to 22 years.

In the same year she established the school for social work for women known as the Matru Seva Sangh Institute of Social work. Over the years, the school has created a large number of women workers with proper training in social work, who have got absorbed in various institutions carrying on social service.

The maternal instinct of Smt. Kamalabai Hospet has manifested itself in her rehabilitating and providing shelter for innumerable backward, forsaken and ailing women and retarded children of Vidarbha during the last 60 years. She has literally become "Mataji" to them all.

The zeal and unsparing efforts of Smt. Kamalabai who is now 84 years old, have transformed the Matru Seva Sangh into a movement for the social betterment of women—particularly the poor, the backward and the neglected. □

Nepal's Economic Development

(*Contd. from page* 9)

creates new economic categories and classes which make their demands on the government, the flow of foreign capital is distributed by the elite and hence has very little effect in reshaping economic relations," he says.

To sum up, there are no two countries in the world that are more close to each other than Nepal and India. The close ties between the two countries are reflected in all walks of life. Politically, the two countries have a close identify of views on maintaining democracy as the only viable political system. The structure of the political system in Nepal has been further improved under the dynamic leadership of His Majesty King Birendra. It goes to the credit of the King and the leadership of India that other countries' efforts to create a void in relationship proved futile. The five-year Indo-Nepal Treaty of Trade and Transit is significant for agreement on the use of overland route and for measures to prevent deflection of trade. The main worry for Nepal today is the serious trade deficit with India. In its total turnover of Rs. 2,600 million, the trade deficit is estimated at Rs. 1,600 million. Even after making strenuous efforts in trade diversification, Nepals' trade remains mainly with India. India has emerged as the biggest aid-giver. Mutual cooperation and respect for each other's independence remain the bulwark of Indo-Nepal friendship and development. □

Indian Shipping

Sriram Trikannad*

OVER six decades have passed since the very first Indian ship 'S. S. Loyalty', belonging to the Scindia Steam Navigation Co. sailed from Bombay for the United Kingdom on the 5th of April, 1919. At the dawn of Independence, Indian Shipping could command a gross tonnage of 1,92,000. Not much, of course, when compared to the large fleets owned by British or American shipping lines but it was a beginning and even this small fleet was built in the face of toughest of odds, and it was something to go by.

Today, Indian shipping has a gross registered tonnage of 5,624 million GRT, representing a growth by almost 30 times in the 33 years that have elapsed since independence. In terms of world tonnage, it still represents a mere two per cent of the global fleet. The Hindustan Shipping at Vishakhapatnam, which came into being during the war years as largely a ship repair workshop, was developed into a full-fledged shipyard and has built as many as 78 ships in the last three decades of its functioning as a shipbuilding unit, with a gross tonnage of 8.02 lakh dwt, covering a wide range of ocean-going vessels and specialised crafts. The newest to join our network of shipyards is the Cochin Shipyard which began to build ships in 1976 itself though the Shipyard is scheduled to be completed only in 1982. Besides there are two ship building yards at Mazagon in Bombay and Garden Reach in Calcutta, under the aegis of the Defence Ministry. Though these shipyards primarily build warships for the Navy, they also construct tugs, harbour vessels and the like for merchant navy. Cochin Shipyard has three bulk carriers of 75,000 tonnes dead-wt. capacity under construction and the first of the ships to emerge from this shipyard is a carrier ordered by the State-owned Shipping Corporation and is expected to be completed by the year end Hindustan Shipyard, now in the 35th year of its operation, has, in the last one year delivered one 21,000 ton vessel, launched two vessels and laid the keel for two more. Its capacity is going to be raised from 2.65 pioneer class ships per annum to 3 pioneer class ships per annum. At present, the country produces Rs. 60 crore worth of ships annually.

Another significant event in Indian Shipping perhaps was the starting of the state-owned Shipping Corporation of India in 1961 with a fleet of 17 ships aggregating a little over 120,000 tons. Today the state-owned Corporation boasts of a fleet of 141 ships aggregating 28.33 lakh grt or roughly half the total strength of Indian shipping which stands at 56.24 lakh grt. In other words, the Shipping Corporation has been able to attain a premier position whereby it has more than the combined strength of all other Indian shipping companies put together. □

(*All India Radio*)

Agricultural Marketing in Bihar

L. P. Singh*

THE term "Agricultural Marketing" finds its origin in the Royal Commission on Agriculture Report (1928). The Commission in its Report drew attention to "the disabilities under which a grower was labouring and exploitation to which he was exposed". The Commission analysed the fundamental defects in the existing system of agricultural marketing in India and emphasised the need for undertaking exhaustive Marketing Surveys as a preliminary to further action. Accordingly, the Government of India and the State Governments set up organisations to look after the problems of agricultural marketing. Marketing Section in Bihar was constituted under the administrative control of the Department of Agriculture in 1935. The scheme was sanctioned initially for a period of 5 years and consisted of a skelton staff of one Senior Marketing Officer, three Junior Marketing Officers and Supporting office staff. The work was mostly confined to the survey and investigation on Marketing of important Agricultural commodities, Livestock and livestock products according to the programmes and synopsis drawn by the Agricultural Marketing Advisor to the Govt. of India. The Agricultural produce (Grading and Marketing) Act, was passed by central legislature in 1937. "The Act defined standards of quality, fixed grade designations to indicate quality and prescribed grade designation marks with regard to commodities includeed in the schedule to the Act." But only a few experimental grading centres could be opened in respect of ghee, oil, gur, tobacco. The quantity graded was insignificant considering the total production.

Plan Period Developments

The Planning Commission was quite alive to the problems of Agricultural Marketing and made several recommendations covering various aspects of agricultural marketing. But no significant progress could be made during the First Plan period, as efforts were directed towards rehabilitating the agricultural economy shattered due to war and partition.

In the Second Five Year Plan, emphasis was laid on the development of agricultural marketing with a view to organise and improve the marketing system. This is evident from the fact that out of a total outlay of Rs. 38 crores for development of agriculture under the scheme to be directly run by the Ministry of Food and Agriculture about Rs. 6 crores was provided for various marketing schemes including warehousing as compared to a provision of only Rs. 75 lakhs out of Rs. 31 crores during the First Plan. In addition, adequate provision was made in several state plans also. In Bihar, it was considered worthwhile that for achieving over all efficiency in marketing attack should be made on all fronts and the various aspects of marketing should be welded together to minimise and reduce the marketing cost. With this end in view, programmes were formulated for the establishment of regulated markets.

It was during the agriculturally oriented Third Plan that the drawbacks of the existing agricultural markets -shortage of space, poor lay-out, unfair practices, inadequacy of marketing facilities etc. came to surface. It was recognised that "Regulated market could perform valuable functions in the marketing process as the nerve-centres of commerce in agricultural produce. It was with a view to improving efficiency of these markets and eliminating the malpractices that regulation of markets was conceived and legislation for this purpose—Bihar Agricultural Produce markets Act, 1960 was enacted. In the First lot 10 wholesale markets were selected for regulation. Later on, the Act was enforced in 68 wholesale markets in the State and 60 market committees formed.

But unfortunately, these regulated markets could not go a long way in achieving their socio-economic objectives primarily due to the lack of properly developed market yards. The working of these regulated markets in the State brought to light the fact that it was very difficult to provide an efficient marketing system without providing a chain of modern and well laid-out market with all the necessary facilities provided therein.

Due to the lack of proper market yards the Market Committees were, on the one hand, experiencing difficulty in enforcing the regulatory provisions of the Act and on the other they were being deprived of their legitimate income by which they could take steps to provide facilities to the yards. If sales and purchase take place all over the locality, it is very difficult to check evasion of fees. In fact, none of the committees was getting even a reasonable portion of the fees payable to it.

Expeditious development of Market yards and provision of other ancillaries such as improved seeds, pesticides, sprayers pumpsets, etc. was, therefore, considered a 'sine qua non' for the proper functioning of Regulated Markets.

However, in view of the limited resources only 10 market yards were proposed to be constructed during the Fourth Plan period. A provision of Rs. 19 lakh was accordingly made by the Government of Bihar for being given on loan to the Market Committees. The Government of India also provided funds to the tune of Rs. 1 lakh per market in the areas where the scheme of Small Farmers Development Agency|Marginal Farmers Development Agency were in operation.

But the requirement of fund for the construction of market yards was so huge that the funds provided by the Govt. of Bihar as also by the Central Government proved to be extremely inadequate. In fact,

Department of Commerce, CM College, Darbhanga.

the problem was too large a dimension to yield under slow sporadic efforts". In view of the shortage of finance for agriculture as a whole, there was no possibility of finding resources of this magnitude for the construction of market yards.

I.D.A. Assistance to Bihar

The visit of the Reconnaisance Team of the World Bank in 1971 and the formation of Bihar State Agricultural Marketing Board at such a crucial juncture will always be remembered as a great fillip to the "Marketing Revolution" in this State. The team expressed the view that the World Bank would be prepared to consider the project as it was likely to confer substantial economic benefit to the poor cultivators of this predominantly agricultural state. It was, however, pointed out that the formation of an organisation like the State Agricultural Marketing Board would be a pre-requisite for the I.D.A. assistance. Accordingly, the Bihar State Agricultural Marketing Board was constituted by amending the Bihar Agricultural Marketing Act 1960. In 1972, the I.D.A. sanctioned a project for the development of 50 markets in Bihar at a total cost of Rs. 16.95 crore. Under this project, 50 selected important markets are to be provided with modern market yards along with marketing and storage facilities. The market yard proposed to be constructed would be a composite market which would not only provide facilities for the sale of produce like auction platform, trader shop, weigh bridge, warehouse, rest house and cattle-shed but also make available input such as seeds, fertilizers, pumps, sprayers and workshops for repair of agricultural implements. Consumer stores, space for Post-Office and Bank etc. would also be made available in the market yard. Construction of such market yards has already been complemented in 32 markets and is in progress in the remaining markets.

Central Assistance and S.F.D.A. Markets

In addition to these markets, popularly known as World Bank Markets, market yards at an estimated cost of Rs. 10 lakh each are to be constructed in 30 other markets with the financial assistance of the Central Government.

One hundred small market yards at an estimated cost of Rs. 1 lakh each are to be constructed in the areas of Small Farmers Development Agency and Marginal Farmers Development Agency. Funds for these markets were provided by the Central Government during the Fourth Plan period.

Control & Supervision

In the end of March 1979 there were 114 regulated Markets in the State. The regulation of unregulated markets is still in progress. The State Agricultural Marketing Board has been supposed to exercise general Control over the market committees. The body corporate of Marketing Board consists of a full-time Chairman Member-Secretary and Director of marketing deputed by the State Government. There are representaives of several other departments, including Agriculture, Finance, Land-Acquisition, Revenue, Town Planning and others.

Expanding Income

Quite evidently, the success of entire programme depends considerably upon the financial position of the market committees. Market fee @ 1 per cent forms the most important source of income of Market Committees. The ever-expanding income of market committees speaks of their glorious success. From mere 35 lakhs in 1972-73, it has touched the all time high figure of Rs. 6 crore 3 lakh during the financial year 1978-79.

Grading & Standardisation

As Grading and Standardisation forms a part and parcel of agricultural marketing the State Agricultural Marketing Board is making elaborate arrangements for the grading of some agricultural commodities. Three Grading laboratories under the Board are working at Patna, Darbhanga and Ranchi. The laboratories are at present engaged in the grading of ghee, oil, spices etc. These laboratories will come as a great relief to the people as they will go a long way in checking adulteration. Apart from this, one Grading Inspector with all the grading equipments has been posted in each regulated market.

Market Intelligence

Information regarding the prices of different commodities in the important mandies and its dissemination plays an important role in agricultural marketing. The State Marketing Board has got a market intelligence section for collection of information regarding prices, stocks, arrival and other items related to agricultural marketing. So far 45 market intelligence centres have been established and another 41 centres are likely to be in operation very shortly.

"Jumbo Prawn"

JUMBO PRAWN which is found in the sweet and brackish waters of the Konkan region, has great economic value on account of its rapid rate of growth. They puts on a weight of 100 to 150 grams within a period of 8 to 10 months, fetching Rs. 2 per prawn.

To produce the prawn on a commercial scale, the Faculty of Fisheries of the Konkan Krishi Vidyapeeth, submitted a project to the ICAR which accepted the same. Accordingly Jumbo prawn seed has been produced on a large scale at the Marine Biological Research Station, Ratnagiri. The seed was released in the tank of 60×30 sq. ft. with two feet water column, at the Government Fish seed Farm, Hadpsar near Pune. Out of 1000 fingerlings of half inch length and 0 1 gram weight, the yield was 353 jumbo prawns of 40 kgs in about 233 days. In other words, within a period of 233 days an yield of 2 ton per hectare was received.

Encouraged by the success, three fish farmers and two Government fish seed centres took up this activity during 1979-80. Thus, the seed production activity of the Marine Biological Research Station, Ratnagiri has spread to six different places namely Pune, Panvel Khopoli, Miraj and Kolhapur. The Faculty of Fisheries of the Konkan Krishi Vidyapeeth is rendering necessary technical guidance in the matter.

A Case Study

Vegetable Cultivation In Kankipadu Block

A. G. Prasad*

VEGETABLE cultivation has not made the desired progress because it is labour intensive and requires great care and constant attention throughout the crop period. Also the cultivation is restricted only to garden lands, that is lands with assured irrigation and drainage facilities and involves higher expenditure compared to other crops. Vegetable cultivation depends largely on the timely supply of quality seeds, fertilisers, pesticides and irrigation. Further it requires a well developed marketing system.

A survey was conducted by the Agro-Economic Research Centre, Andhra University, in the Kankipadu Block in Krishna District of Andhra Pradesh to study the problems faced by the small farmers as vegetable cultivators vis-a-vis large farmers. A total number of 90 vegetable cultivators selected from five villages were contacted.

In the villages nearer to the marketing centre, Vijayawada, both the small and large farmers reported cultivation of vegetables extensively. But with the increasing distance not only the area under vegetables decreased but also the proportion of small farmers among vegetable growers declined (Table 1).

TABLE I

Distance (Miles)	Percentage of area under vegetables	Percentage of vegetable growers among	
		Small Farmers	Large Farmers
2 . . .	27.42	47.3	40.1
3 . . .	86 16	71 7	74.5
4 . . .	6.14	17.1	71.9
8 . . .	5.41	11.1	47 4
9 . . .	2.81	3.1	14.1

In the villages farther from the marketing centre, the small farmers reported weak financial support, lack of transport and communication facilities as reasons for not taking up vegetable cultivation in large numbers as compared to the other class of farmers.

*He is with the Agro-Economic Research Centre, Andhra University, Waltair.

Another constraint is the non-availability of garden land with good irrigation sources and better facilities for water management. In many a case the land is not owned by the small farmers.

Garden land formed 16 per cent of the total land owned by the small farmers as against 34 per cent in the case of large farmers. Apart from this, inequalities are also noticeable in the ownership of filter-points, electric motors and transport equipment. These inequalities in turn had its impact on the economics of vegetables cultivation as may be seen in Table 2.

TABLE 2

Profit or Loss on Vegetable Cultivation per Acre

Item	Small Farmers	Large Farmers
Total expenditure (Rs) .	1726	1475
Of which :		
(i) On irrigation (%)	13.73	14.10
(ii) On rent (%) .	32.54	13.56
Gross value of the output (%)	1570	1783
Net income (Rs.) . .	—156	308
Net income excluding rent from expenditure (Rs)	406	508
Profit of the pure owners of garden land (Rs)	409	376

Expenditure on irrigation and rent on leased land together accounted for as much as 46 per cent of the total cost incurred by the small farmers on vegetable cultivation as against 28 per cent by the large farmers. Lack of irrigation sources and the exorbitant rates

A Cabbage Garden

charged for water purchased acted as a bottleneck for the small farmers to reap profits. As a consequence, vegetable cultivation by tenant farmers turned out to be one of low profitability. Due to lack of transport and the hardships attendant at the marketing centres (such as octroi duties, cesses, weighment charges, commission charges, etc.) about 40 to 50 per cent of the produce is sold locally to the middlemen at prices far lower than the ruling prices at the market. This percentage increased with the distance from the market.

Thus the above analysis brings out quite sharpl various constraints in vegetable cultivation faced b the small farmers. The unique properties of land re quired for vegetable cultivation and the extremely limi ted ownership of such land by the small farmers ar serious problems that need to be solved first. This i to be followed by extension, credit, transport and mar keting facilities. Then only vegetable cultivation coul be of substantial benefit to the small and margina farmers. □

Future Outlook For Fertiliser Consumption

FERTILISER consumption is in a large measure a function of the price relationships between fertiliser price and the price that a farmer gets for his produce. In the last 4-5 years, this relationship had been constantly moving in favour of the farmer (through the reduction in fertiliser prices and an increase in output prices). This resulted in a continuing increase in fertiliser consumption which nearly doubled during the last 5 years. Even during a year like 1979-80, when the country faced a severe drought, fertiliser consumption registered an increase, even though a marginal one.

A major qualitative change has taken place in the situation with the very steep increase of about 40 per cent in the fertiliser prices with effect from June 8, 1980. A question that could be asked is whether the increase of this magnitude in one go was the right approach or should this have been done in stages, allowing the market to adjust itself gradually. There are pros and cons to both the approaches but now that the decision has been taken we have to move forward therefrom.

If we compare the physical return and the gross financial returns to the farmers from fertiliser use for different crops in the year 1971-72 and in 1980 prior to and after June 8, it will be seen that in most cases, the farmer is now worse off compared to the 1971-72 situation and considerably more so than was the case from June 1980. This means inevitably that this propensity to use fertilisers has come down sharply. Government is undoubtedly aware of this and the dangers inherent in it. Consequently, the Agricultural Prices Commission is reported to have worked out the proposed future procurement prices taking due cognisance of the price increase in fertilisers. Government's intention to compensate farmers for these price increase is, therefore well known although the next level of prices has not yet been announced. Whether or not this would fully compensate what the farmer thinks is the increased cost to him will take time to manifest itself.

Tentatively it would appear that the use of fertilisers for cash crops like sugarcane, tea, cotton, tobacco, etc., will not be adversely affected as the market prices mechanism will take care of the increased costs. Actual off take will be determined primarily by availability though past experience has shown that areas sowing cash crops have magnetic effect over a vast area to attract supplies. What we have to watch carefully is the impact of the higher prices on the offtake of fertilisers for major cereal crops as any cut back in consumption of fertilisers could result in a drop in production of cereals with serious consequences. The view point expressed by some quarters that the higher price will not inhibit offtake of fertilisers for cereal crops could well be an optical-lusion.

Farmers need credit to buy fertilisers and the cooperative system is a major source for it. Experience has shown that a break down in the system immediately affects fertiliser offtake. With increased prices, the requirements have naturally gone up. It is, therefore, most unfortunate that at this crucial stage, the cooperative credit structure in many States is under terriffic strain (and in a few cases in a state of complete collapse) due to the proposed writing off of crores of rupees of outstanding dues, which would undoubtedly include nor infrequently wilful defaulters. Their impact on fertiliser offtake by farmers will need to be carefully monitored.

At this stage, mention could also be made of the recent Government decision to make fertilisers available to the farmer at the statutory selling prices, at the block level also irrespective of the distance from the railhead. This should to some extent mitigate the hardship of farmers in the remote areas arising from the increase in prices, though its overall quantitative impact in generating incremental offtake may not be large.

The other issue for concern is our ability to meet in full the requirements of the farmers commensurate with the demand arising from improved weather condition. The industry has passed through distressing times during the last few months when sizeable indigenous production has been lost due to a number of plants being shut for reasons beyond the control of the industry like shortage of power, coal, feedstock, etc Fortunately this situation has begun to improve in the last few days. It is our earnest plea to the Government, which only has control over these items, that their full supply to the industry should be assured so that the commissioing of new plants can be expedited and the operation of existing capacity at the optimum level ensured. This will help in meeting the growing requqirements of fertilisers during the current season and avoid unnecessary imports at high prices, which tend to go up every time we enter the international market as buyers. Even if the supplies were available at reasonable prices, there are reservations if infrastructural facilities like shipping, ports and railway systems, which are already strained, could cope with additional movement of imported material. Logistics of domestic production being much easier to organise, the need for optimising domestic production is imperative. □

(Fertiliser News).

Prospects of Economic Development in Tehri Garhwal

Rajiv K. Saxena*

THE Tehri-Garhwal district is one of the most backward districts of U.P. for which its physiographical conditions are primarily responsible. Agricultural and other productions are insufficient to meet the demands of the inhabitants and the employment opportunities are scanty. Only 19 per cent population is literate. The district lies almost entirely in the Himalayas comprising series of mountains and narrow vallies. Three rivers named Bhagirathi, Bhilangana and Alakananda, are the main sources of water.

Out of the total population of the district about 82 per cent are in agriculture, 9 per cent in some regular service, 5 per cent in some business and the remaining 4 per cent are labourers While agriculture dominates in the total population yet the agricultural production is low. People generally have small holdings.

In this economically backward district, new schemes are being introduced by the Government in diversified fields. To increase the agricultural production it is planned to introduce advanced methods of farming and create additional capacity for irrigation. Also to improve the rural economy, cooperatives will be introduced to enlarge the forest area. For rapid industrial development necessary facilities will be provided to the entrepreneures. Roads and means of transportation will be developed.

Natural Resources :

The water resources of the district are mainly three rivers. Besides there are many subsidiary small rivers and water falls. The Bhagirathi valley occupies the eastern part of tehsil Tehri, western part of tehsil Pratapnagar and south-western part of tehsil Deoprayag. Most of the large size villages of the district are situated in this valley. The Bhilangana river flows south-west ward through the central part of tehsil Pratapnagar. The Alaknanda valley occupies the southern part of the district. These rivers while flowing through the high mountains have many waterfalls. Low cost Dams can be constructed on these falls which can fulfil the local demand of electricity and irrigation.

Forest resources are plenty in the district. 2,69,540 Hectare forest is under administration. Economically important and other fuel purposed trees here are Pine, Devdar, Sal, Fir, Kharsu, Moru, Mukat. These are scattered in 81 per cent of the forests. The rest of the area is used for cattle grazing. It is estimated that under Soyam Forest there is 54,503 hectare land. In this area the forests are not in developed stage and there is strong need to develop these areas. The upper part of Bhilangna valley is covered with Banj and Kharsu forests and pastures. Chir forests occupy the middle and lower parts. In the Alaknanda valley the uplands are covered with 'Banj' and 'Chir' forests. The sal forests extend upto an altitude of 1,066 metres. The forests of Devdar occur in the northern part of the district along with blue pine and Cypress between altitudes of 1,520 and 2,150 metres. There are three principal Oaks, namely, 'Banj', 'Moru', and 'Kharsu' each occupying more or less a distinct altitude zone. The soil of the region is however of poor quality, shallow and stony.

Horticulture is one of the most important available alternatives which can be tapped for improving the living status of the people of this region.

Various minerals have been found in Tehri Garhwal in the past. Mainly, Calcium, Dolomite, Gypsum, Rock Phosphite and Copper are found in this region. Marble, Popestone, Magnesite and uranium's deposits are also expected to be found here. The district has a large variety of animals, birds, reptiles and Fishes. The district is noted for black bear found in the Tehri forest division at lower altitudes and for the brown and white Bears found at higher altitudes. Panthers abound almost throughout the district.

Utilisation of the Resources

Forests can be developed in small sancturies. Tourists spots can also be developed here to increase the income. Different occupations which can be developed with the available resources are : sheep/goat rearing, horticulture, fruit canning, dairying, poultry bee keeping, wood industry, carpentry, coal bricket making and other occupations based on forest produce

The important trees are Van, Moru, Chir, Kukka Kharsu, Sal, Fur and Devdar. Chir is tapped for resin and its wood is used for building purposes. The dry leaves can be utilised for manuring and for packaging purposes. Devdar timber can be used for building houses, boats and railway sleepers. Building wood lisa, firewood, bans, cane, medicinal plants etc. are obtained from the forests. The industries based on the forest resources have not been developed therefore, almost all these valuable properties are sent outside the district. Some important forest resources based

*Head, Deptt. of Commerce, Garhwal University, Tehri-Garhwal

industries which can be developed in the district are saw milling, timber seasoning, wood wool, plywood making match apl.nts, Pine oil, packing cases, making coarse paper from pine wood. Other small scale units of the items like Stamps, scales, pencils,, holders, boards, hanger and toys can be started here. Mats and baskets can be prepared from Ringol.

Horticulture

It is one of the most important available alternatives which can be tapped for improving the living status of the inhabitants of this region. New gardens can be developed on the scientific basis and renovation of the old gardens should be encouraged for their maintenance loans and other financial assistance may be provided to the farmers. Effective arrangements for the disposal and marketing of the fruits are also necessary. Jams, jelleys and fruit juices can be prepared in small scale units. Apple, nashpati, aru, khubani, strawberry, cherry badam and akhrot are the main fruits which are planted in the region. So the improvements in the quality and to increase the number of these plants dense plantation scheme should be implemented. Along road sides some frui belts and gardens are being prepared. The work wa first started on 60 km. long Mussorie-Chamba road i the year 1964-65. At present the gardens cover te thousand hectare in the district.

Minerals

Calcium is found in Dhaurapati, Barkotara an in some parts of Sang Valley. About 12 millio tonnes of Calcium is expected to be found in Dhaura patti. This can be used for manufacturing Cement Dolomite which is found in northern area of San valley is suitable for Steel Industry. Magnesium's ex traction is also expected from it. Gypsum is foun near Rishikesh. Rock Phosphate is also industriall important. Units of Sodium Sillicate and Calcium Car bonate can also be installed here. Small units o soal, talcum power, varnish and paints can be starte here. □

Industrialisation of Almora District

N. S. Rana*

ALMORA district forms part of the Kumaon division in U.P. Forests followed by mineral wealth are the sources which offer raw materials to the industries based on local resources.

At present the forest produce is sold to the highest bidder on commercial lines. The forest-based raw materials, which offer maximum possibilities of industrial development, should be conserved, classified and developed in such a way as to give to local beneficieries the fullest scope and opportunity to utilize them for their economic development. Crude forest produce in its original form need not be exported outside the district. Only processed or semi-processed forest produce which require further processing may be allowed to go outside.

Minerals

The mineral resources in the district have yet to be surveyed extensively. The Directorate of Geology and Mining in coordination with Geological Survey of India have undertaken some survey work, as a result of which Almora Magnesite Ltd, is being established at a cost of Rs. 3.82 crores. They intend to produce 100 tons of Dead Burnt magnesite per day. Another base for quarry of soapstone in Jakhera area has also been granted. But this is not enough. The Directorate of Geology and Mining must play a vital role in the development and utilization of mineral resources in the district.

Fruits

The perishable nature of fruits grown in the district makes the producers suffer huge loss as and when they are not able to transport the fresh fruits quickly to distant markets. It is necessary that the surplus fruit is pulped and tinned for preservation in order to extend its period of marketability. This calls for establishment of a large number of service centres durin crop season for conservation processes. A few uni can also be established for the purpose.

Raw Materials

The requirements of raw materials in case of de mand based industries are comparatively small becau of smaller size of units and their limited resource In the existing set up of depots and the prevailir rules for allotment of raw materials, it is well-nig impossible for small artisans to lift their requiremen from distant depots. The proposal for establishme of a raw material depot at a central place in the di trict, has since been accepted. It is now for th UPSIC to make provision for storing the required ra materials and make the depot function efficiently

Finance

The nationalized banks have not come in a sati factory way to offer institutional finance to sma industrial units. The State Bank of India which is th lead bank for this district has aroused great expect tions. In order to inculcate the spirit of enterprise, is essential that turnkey projects and investment part cipation in industrial ventures by various industri corporations should be encouraged to provide indu trial leadership. Joint sector projects transferable local enterpreneurs after a certain period during whi they run successfully must also be taken up.

Transport

In the absence of quick and alternative means transport, any efforts at industrial growth are bou to be frustrated. The main industrial growth centr of this district are at a distance of 92 to 160 kilometr from the nearest railhead. A small area is served head load carriers from motor roads. The higher he load wages add to the cost of production of each a every item manufactured by any unit situated in hil As such these units cannot stand competition in t market. So long as the means of transport are not w developed, a subsidy on transport of raw materials well as finished goods must be given.

These are some of the problems vitally affecting t industrial growth of this district. So long as prop alternatives to mitigate the above are not worked o and implemented the pace of industrial growth of t district is bound to remain imperceptible.

*Lecturer, Kumaon University Campus, Nainital.

BOOKS

Understanding Sugar Economy

Sugarcane: by C. N. Basu: Allied Publishers Ltd. New Delhi. 1979. PP 237 Price Rs. 48.

THE book gives students of agriculture and to the general reader a panoramic view of the basic information for understanding the sugar economy. It is thus valuable in the sense that apart from making some historical references to sugarcane in India from Indian lores of old, the author brings together a lot of material in one compact volume. For instance, he has given succinct yet comprehensive data on sugarcane cultivation, pests and diseases to sugarcane as also the economics of cane cultivation and allied matters. He has also successfully incorporated many new and modern ideas as genetics of sugarcane, mutation breeding in sugarcane, several types of manures to be used for healthy growth of sugarcane etc. Such methods if employed by cane growers would certainly add to their profitability apart from improving the sugar economy.

Practical hints to growers on how to achieve maximum yields by proper land preparation and adoption of modern cultural practices are also given (Chapter 7) In fact, all that one has to know about sugarcane has been included in this concise book in lucid and readable language. It is bound to be of immense help to growers as well as students of cane economics.

—E. P. Radhakrishnan

Vocational Training

Vocational Training in Residential Institutions: Part II by T. Prasad, National Institute of Public Cooperation and Child Development, New Delhi-110019, 1979, pp. 79.

VOCATIONAL training in residential institutions particularly for the destitute children is one of the important welfare measures. Besides the governmental efforts, voluntary organisations are playing an important role by providing institutional care to the children in running children homes.

The book will, no doubt, act as a guideline to the voluntary organisations interested in developing their institutions by providing essential services. Such services will certainly convert the children into self-supporting and self-reliant in their lives. The weaknesses pointed out in providing vocational training in the residential institutions are worth consideration and suggestive for effecting future policy. The appendices at the end are valuable as these provide comprehensive understanding of the various details connected with the vocational training.

The author deserves congratulations for his deeper insight into the problem and for providing details of the vocational training.

—B. N. Sahay

Corporate Income Tax

The Corporate Income Tax in India (1950-65) by V. G. Rao, Published by Concept Publishing Co., New Delhi. Pages 228, Price Rs. 60.

THE traditional view of the short term zero shifting of corporation income tax has been questioned in many studies, some concluding that increase in corporate tax is shifted forward resulting in higher prices or shifting backwards effecting reduction in wages and others holding that partly share holders and partly capital bear the increase in tax. The object of the present study is to remove the confusion on the subject. The traditional theory is based on the assumption that the companies recover the burden of extra taxes by conducting their business more efficiently. The assumption accords with the advantages of efficiency, equity and ease of collection associated with direct taxation.

The author has selected 22 medium and large scale industries during the period 55-56/65-66 and through empirical research has concluded that of the twenty-two industries while fourteen shift no significant amount of the tax burden seven indicate varying degrees of shifting and in the remaining one no conclusion is possible due to lack of data.

Although the increase in corporation tax reduced the industries' ability to finance their expansion through retained profits it did not cause their alleged continual erosion. Liberal depreciation allowances and the supply of institutional finance provided them with sufficient funds for expansion. The rate of gross dividend was maintained The stagnation in capital formation during the relevant period could be due to other factors. Simplification of corporate taxation which is the highest in the world and further study of its impact on the growth of corporate sector in India has been suggested.

—B. H. Lalvani

Population

Population Geography of India by A. Bhattacharya. Shree Publishing House, New Delhi. Pages 69. Price Rs. 50.

THE book under review, specialised study of research and reference, provides an account about the population characteristics of India in the seventies. It attempts to study the characteristics on geographical concepts. Analyses the distribution and migration of population, behaviour of movement with a special emphasis on social characteristics of population which involve a vast field consisting of marital status, family and household character, level of literacy and education. religious composition. ethnic composition and language.

The author argues that the marital status of the Indian population is uneven for the males and females in all age groups. The social institution of India rests upon collective economy and rarely on individual economy. A divorced life for married couple means greater social insecurity for women under existing conditions. Level of literacy as a mark of social progress is poor in India. Data available for various types of migration are usually detailed by sex, ignoring the details of age. This sort of account

naturally interferes with a fuller analysis of the migration character. Yet the sex composition of migration relates certain social bearings in the country's population characteristics. India being a melting pot of various races and tribes presents multifacted ethnic composition, the study of which unfolds many secrets and modifies popular notions and ideas.

Appended with a bibliography and an index, it may prove a good addition to libraries for research and reference.

—S. K. Dhawan

New Agrarian Technology

The New Agrarian Technology and India by Biplab Dasgupta, The Macmillian Co. of India Ltd., 1980. PP 405 Price Rs. 60.

THIS book, which was first published by UNRISD in 1977 examines the social and economic implications of the introduction of High Yielding Varieties of foodgrains in India. The success of the HYVs during the early years of introduction and the stagnation of the period, 1971-75, are examined in detail. The future scope of the 'new agricultural strategy' are discussed on the basis of the limited available data. True that the introduction of HYVs in selected areas, increased productivity per unit of area averted any possible disaster which could have happened due to any major crop failure or famine conditions. But it does not seem to have revolutionalised agriculture. Agriculture is still highly dependent on the vagaries of weather and rainfall.

The relative advantages of high yielding wheat over high yielding rice leading to the success of the former, the vulnerability of the latter to pest attacks, the limited access of the maximum number of cultivators (small and marginal farmers) to the credit, input supply and extension have been extensively and intensively analysed. It is felt that the scale non-neutrality of the access to resources breaks the arguments of the scale neutrality of the new technology.

The increasing skewness of the distribution of assets, particularly farm assets like tube-wells and tractors, as a consequence of new technology, indicates that the rich farmer would get the future advantages of this superior technology. The author feels the special efforts of the Governments in the form of Small Farmers' Development Agency and such other programmes will have very little success unless village institutions are reformed. The future success of the new technology will heavily rely on the land reforms and other institutional reforms

This outstanding contribution will be highly useful for researchers and for those seriously interested in the development of agriculture in India.

D. Tripathy

On The Road To Development

Development Aid by Shah M. Bijli, Shree Publishing House, Delhi, pp. 103, 1980, Rs. 50.

THE book under review is logically presented and written in most comprehensible manner reflecting the author's capability, splendid efforts and experience in the field of international economic relations. He has examined the role foreign assistance has played in narrowing the gap between two economic Worlds—one embarassingly rich and the other desparately poor.

The occidental economists generally believe that no developing country can obtain economic development without some foreign aid. But as the overall contribution of this kind of resource transfer to the level and character of economic development remains shrouded in controversy, the author also provides a lucid exposition of the weaknesses of the aid programmes. It presents the true picture of the plight of developing nations. The author has done an admirable job in giving a comprehensive picture of development aid in an excellent manner.

Since the concept of the foreign aid is based on European recovery programmes or Marshall Plan which was designed to help Europe recover from the after-effects of the Second World War, the book therefore gives a fine analysis of the process of development aid in historical perspective beginning from the Second World War. The book also gives detailed analysis of development aid including various forms of aid, regional development institutions dealing with Aid and other sources encompassing West Asian aid.

It also devotes some space to explore how much aid for example is needed to make a real difference in the rate of economic progress of developing countries. Besides assessing the performance it also exposes the problems of debt servicing and gives a fine discussion on the proposed new international economic order.

—Dr. Mohammad Iqbal

Women In Indian patriarchal Family

Indian Women and Patriarchy by Maria Mies; Concept Publishing Company, New Delhi, 1980; Price Rs. 75.

AMONG the several books published on India's women and their emancipation during the last decade, Maria Mies''Indian Women and Patriarchy' attracts attention for its quality of research and for some of the insights it offers. The research took nearly ten years; five of these years the author lived in India One discovery she made was that there was much that the middle class women in the West and in India had in common as there was much that differentiated them. It would be a rather brite observation had the author not perceived that despite the seeming similarity of the roles of women within the family, in India and in the West, the family as such, has a different function for the economic system in the "capitalist centres" than for a "peripheral economy" which is both feudal and under many external shackles.

Another insight the author offers is that unlike the women's movement in the West which unambiguously challenges the male-dominance, women in India are seeing the challenge rather in economic and political issues, such as, price rise, scarcity of basic goods. The specific oppression of women per se such as rape, sexual humiliation of poor women by the land-owning classes, wife beating have not become the issues, nor has the dowry system become the basis of any movement.

Another important observation the author makes is that due to the economic crisis although more middle class women are taking up jobs, the traditional

patriarchal expectations regarding their family roles have not undergone much change, rather as she rightly points out, the conflicts between the patriarchal family system and the new expectations of women have sharpened.

However, so far, these conflicts have not generated a movement of protest either against the patriarchal system of the traditional institutions, nor has there been much of a social expression of them.

Significantly, the author makes a special point of the fact that the development processes themselves in India seem to have had an adverse effect on the socio-economic conditions of the poorest section of women, and on women in the rural areas.

While there is some truth in the conclusion that women, urban or rural, educated or uneducated are still tied down by the same "feudal" and patriarchal norms in India, I am not convinced that the awareness of this common problem will generate the solidarity between the rural and urban women for a broad based women's movement in India.

Dr. Mies currently on a teaching assignment at the institute of Social Studies at the Hague, has enriched the work by biographical case studies revealing conflicting situations that obtain in today's India.

Dr. Anima Bose

Illegal Concealed Tenancy

Concealed Tenancy & its implications for Equity and Growth by Kripa Shankar, published by Concept Publishing Company, New Delhi (1980); pp. 147; Price Rs. 42.

THE writer has doubtless explored nothing short of a terra incognita. Clandestine letting of landholdings on share-cropping basis or raising crops through hired labour do constitute a socio-economic syndrome which calls for early remedies, or else the problems facing the landless segment of rural society might grow in magnitude and dimension. Despite the enactment of the U.P. Zamindari Abolition and Land Reform Act of 1950 statutorily abolishing the zamindari system and bringing the cultivators into direct contact with the state, share-cropping continues with impunity because no information about lessor-and-lessee dealings can ever reach the authorities. The book under review studies this concealed phenomenon in its regional and inter-regional variations in the seven districts of Uttar Pradesh—Allahabad, Deoria, Bahraich, Partapgarh, Mirzapur, Ghazipur and Ballia. Such a study can never be a smooth-sailing affairs: the difficulties standing in the way, because of the social and economic power wielded by the landowners and the abject helpness of the sharecroppers and hired-labour, can better be imagined than prescribed. There is a vicious circle and it is hardly easy to break through it. Notwithstanding the difficulties involved, the writer has provided information with regard to clandestine leases, lease market input and output pattern, economic distribution, investment and savings, caste and tenancy attitudes of lessors and lessees, indebtedness and so on.

The measures suggested for the eradication of the socio-economic evils the illegal concealed tenancy has given birth to is almost stereotyped. He suggests, tions also, that Gaon Sabhas be asked to submit information about lessees, lekhpals be instructed to maintain proper records with details of share-croppings, the area of land-ceiling be lowered. Since corruption at almost every level is deep-rooted the Gaon Sabhas and Gaon Panchayats are yet to rise above local jealousies and superstitions; the performance of lekhpals has not been beyond suspicion either. The methodology devised and made use of included what the writer describes as 'a pseudo questionnaire' which would have been better appended; there seems to be little reason why a questionnaire should ever remain sub rosa. The book published with the financial support of the Indian Council of Social Research should not have been priced so high.

—Dr. Tara Charan Rastogi

Pioneering Work in Resource Maximisation

Productivity, Production Function and Technological Change : By S. S. Mehta, Publishers : Concept Publishing Co., New Delhi, pp. 184, Price : Rs. 40.

THE motive force of industrial growth and its acceleration lies in the rate of growth of technological change and this has been one of the basic considerations of development planning in India. The ruling technology sets the condition for the optimum use of resources and the planners are now on their way out for discovering the optimum levels of resource utilisation in different industrial matrices. A scientific micro-level analysis always requires feeding of required data constistent in scope and definition, but unfortunately serious limitations in this regard exist in most of the developing countries.

The present study which is divided into eight chapters explains at suitable length the factor productivity indices which use the ratio analysis to measure the movement of technological progress or productivity. Taking this as the basic theme, the growth profile of all the 27 industries is meticulously examined and the results are presented through a cross sectional inter-industry analysis from 1953 to 1965. The inter-industry correlation study makes a serious attempt to measure the input utilisation and output movement while a mathematical application through various model studies has been established in tracing the production function approach for selected Indian industries. All this has made it a cogent and intensive study of input analysis in the Indian economy with the usual spotlight focussed on the role of technological progress. The masterly treatment of the basic ideas has made the study a pioneering work in the field of resource maximisation and use thereof.

Amar Nath Datta

Social Welfare Special Number on Kerala

Social Welfare, English monthly of the Central Social Welfare Board has published a Special Number (August—September 1980) on Kerala State. Priced Rupees Four, this profusely illustrated special number has packed in 140 pages illuminating articles depicting the various facets of legendary land of spices.

SPARE 5 MINUTES

and help somebody you know-

be he a carpenter, cobbler, tailor, vegetable vendor, scrap collector, hawker or any other small earner. Tell him how he can earn more by improving his business with a loan from Central Bank.

A little advice from you, a little urging, may help to change his life. And it doesn't cost you any money! Central Bank loan schemes for small earners cover the following groups (*figures in brackets indicate approximate size of loan given*).

Carpenters (Rs. 2000), Tailors (Rs. 750), Cobblers (Rs. 200), Hawkers (Rs. 1000), Fruit Vegetable Vendors (Rs. 500), Scrap Collectors (Rs. 250), Roadside Tea Stall-cum-Eating House (Rs. 3000), Stall Owners (Rs. 1500), Potters (Rs. 1400), Papad makers (Rs. 1500), Basket makers (Rs. 250), Broom makers (Rs. 100 per borrower), Mat makers (Rs. 160), Rope makers (Rs. 600), Blacksmiths (Rs. 1000).

These are term loans at reasonable rates of interest (4% to 10½%) given for equipment and raw materials, and for meeting working capital expenses and other sundries. They are repayable within 8 months to 2 years.

So, if you know a deserving person, tell him about what Central Bank can do for him.

Central Bank of India
(A Government of India Undertaking)
The bank that moves out to people and places

STEP BY STEP

Indian Fisheries Atlas Released

THE Indian Fisheries Atlas the margnum opus, the rst of its kind in South-East Asia, brought out by the farine Products Export Development Authority MPEDA) was released by Shri Z. R. Ansari, the Inion Minister of State for Commerce recently. The Minister congratulated the MPEDA on bringing out ıe atlas which gave a synoptic picture of the fishery esources of the country.

Dist. Employment Centre Envisaged

TO overcome the problem of educated unemp-)yed in the country, the Union Government has ıvisaged an ambitious plan by setting up district nployment centres, with a decentralised approach, ccording to the Union Planning Minister, Shri N. D. iwari.

Speaking to newsmen in Srinagar, he said under ıe plan 1,000 youths would be covered by each dist- ct centre. The scheme aimed at providing employ- ıent to five million youths in the country in one year

India Secures Overseas Contracts

WITH the securing of two overseas contracts re- ntly Engineering Construction Corporation Ltd. CC) a wholly owned subsidiary of Larsen & Tou- o Ltd. is currently executing foreign construction ntracts of the total value of Rs. 44 crores. The two ntracts are for the construction of six buildings for

Model of a Sports Stadium being built by an Indian firm in Iraq

ımigration Control and Custom Inspection in Iraq d technical services for mechanical work for an oil ocessing installation and facilities on Zirku island the Arabian Gulf, 160 km from Abu Dhabi. It also executing two earlier contracts—one of high- e building construction in Sri Lanka (Rs. 7.2 ores) and the other of constructing a sports stadium Iraq (Rs. 16.9 crores). □

T and V System Boosts Production

THANKS to the Training and Visit System of rural development, introduced in Gujarat, two years ago, the yield of bajra per acre rose to 934 Kg in 1978-79 from 598 Kg. in 1977-78. Also the production of maize registered a growth from 1.22 lakh tonnes to 2.44 lakh tonnes. Total foodgrains produced were 44.83 lakh tonnes against 38.73 lakh tonnes during the preceding year. Production of oil seeds rose from 19.55 lakh tonnes to 20.59 lakh tonnes and cotton from 19.42 lakh bales to 21.01 lakh bales.

This is really a remarkable achievement in a state like Gujarat where farmers, holding not more than two acres, are poor, illiterate and the nature is also not bountiful.

The secret of the success lies in the T and V schemes which bring to the farmers' doors the timely technology according to his needs.

Coal Scientists Award For 1980

MINISTRY of Energy & Coal (Department of Coal) has instituted two Annual Awards for meritorious research in the fields of application oriented basic research or development research in Coal Science and Technology. The Awards carrying a cash prize of Rs. 5,000 and Rs. 3,000 respectively besides a Gold Medal will be of two categories, a "Senior Coal Scientist Award" open to all research, development and technological personnel connected with coal science and its utilisation and the other "Junior Scientist Award" restricted to similar personnel but below the age of 35 on first January of the year for which the Award is made.

Nominations are invited for Awards for the year 1980 on or before 30 November, 1980. Nominations should be sent in sealed cover marked to Director, Central Fuel Research Institute, P.O. FRI-828108, Distt. Dhanbad (Bihar).

New Bio-Diesel Generator

A BIO-GAS operated generator capable of producing electricity for lighting rural homes, driving irrigation pumps and operating farm machinery has been developed by India Institute of Technology, Delhi. The engine used in the generating set is a conventional diesel engine with some modifications enabling

[illegible] operation with bio-gas as main fuel. Nearly 85 to 90 per cent of its fuel requirement is met by bio-gas generated from farm and animal wastes. For the remaining ten to fifteen per cent, diesel is used in the conventional manner just to initiate and assist combustion of bio-gas.

IFCI's Performance

DURING its existence for 32 years, the Industrial Finance Corporation of India has extended financial assistance to the tune of Rs. 1047.24 crores for 1265 projects which has helped a total capital outlay in the industrial sector to the extent of Rs. 7744.27 crores. It has extended assistance to the development of backward and notified backward areas to the tune of Rs. 425.33 crores for 473 projects with a total outlay of Rs. 32.33 crores. For the current year, the IFCI has sanctioned a net financial assistance of of Rs. 149.81 crores.

Family Planning Programme Should Be Above Any Controversy—PM

Answering a question whether there was any alternative for economic viability for the nation in the face of failure to curb population growth rate to a manageable proportion, in an interview to Doordarshan telecast on September 24, 1980, Prime Minister, Shrimati Indira Gandhi said : "The real answer, of course, is development from both angles : first the development to provide what the people need, to open up areas, and secondly because development itself curbs families, I mean people who reach a particular standard are more conscious of their duty to the child. That is, they want something more for their children than they had ; and, therefore, they themselves think about smaller families. But ultimately, of course, size of the population has to be tackled at various levels not just through development, but through persuasion of people". She also said that in places like Punjab where there has been agricultural progress or industrial areas or even a place like Kerala which has educational progress, there the birth-rate has gone down.

She also said : "Well, obviously a subject like family planning should be above any controversy. But as you have noticed in the past years, there have been certain parties and groups which have done tremendous propaganda against this telling people of one religion that they will be exterminated and the others that their numbers were going down and they will be in difficulty, besides, of course, all the propaganda that was done about sterilisation, because we do not believe in coercion ; we think that there should be persuasion. But this must be done on a massive educational scale and unless everybody is in favour it will take a very long time and may defeat the whole purpose of it."

She also felt that we have to involve not just the department that is in charge of this, but the whole population, specially schools, the whole youth movement, women's organisations, other institutions which are concerned with any type of social welfare.

Asked about the status of women, she said "We are doing a great deal. We have to start at the bottom i.e. the girls ; and I think a great deal is being done now to help girls to continue with their education and not drop out as they have been doing."

Boost To Small Savings

OVER the years small savings have come to occup an important place in the mobilisation of resource for development of the country. The net collectior under the small savings schemes were about Rs. 22 crores during the First Five Year Plan period. Sinc then, the savings movement has made good progres The Sixth Plan (1980—85) envisages a net collectic of Rs. 6,337 crores. This year's budget estimate fo small savings is Rs. 1100 crores. The number (regular savers in the country is more than 5.5 crore and the total outstanding deposits amount to ove Rs. 7000 crores. Under the Pay Rolls Saving Scheme in offices and establishments, there are about 74,00 groups with a membership 80 lakhs. Similarly, ther are Sanchayikas for educational institutions number ing about 43,000 with a total membership of 1,10,00 Saver Students.

Breakthrough In Remote Sensing

BY interpreting satellite pictures India has carrie out the first-ever study of snowfall conditions in th Himalayas. The evaluation is based on the meterolog cal data, received daily from TIROS-N and No AA-(satellites launched from USA. In addition the LAND SAT satellite also provides the data every day. Base on these data, the NRSA has predicted that this year' snow-melt flow into Bhakra reservoir would be com paratively less than the previous years except that o 1977.

The National Remote Sensing Agency (NRSA) Secunderabad engaged in this task assessed snowfal conditions in the Himalayas during winter to predic the snow-melt runoff during summer. The study ha been carried out for the river Sutlej on which th Bhakra reservoir is situated.

SIDO Training Programmes for Weaker Sections

SMALL Industries Development Organisation i training handicapped persons for self-employment. It field agency—Small Industries Service Institute, Indor recently organised training courses for deaf and dum persons in Batik printing, readymade garments, silver ing of glass for mirrors, and manufacture of pheny and wax candles. For these training programmes, a special course design had to be evolved to communi cate to the participants the techniques of manufactur ing processes involved.

During 1979-80, Small Industries Development Or ganisation imparted training to more than 4,000 per sons belonging to the weaker sections of society in cluding tribals, women, rural artisans and the educat ed unemployed.

Presentation of Gandhism for Posterity

Vice President Shri M. Hidayatullah is seen releasing a set of four volumes of Collected Works of Mahatma Gandhi in English and Hindi at a functon held in New Delhi recently.

Looking on are the Minister for Information and Broadcasting, Shri Vasant Sathe and the Minister of State for Information and Broadcasting Smt. Ram Dulari Sinha.

Vice-President Releases Gandhi Volumes

"IT is Gandhiji's healing touch which we need surely today to restore good sense and to extinguish the fires of violence that have sometimes been raging around us. Gandhiji held communal harmony as one of his most cherished desires for which he was prepared to make any sacrifice and ultimately laid down his own life", said Vice-President Shri M. Hidayatullah. He added : "The ideas and principles propounded by Gandhiji are of universal application. They are ageless and prophetic."

Shri Hidayatullah made this statement while releasing at New Delhi on October 1, Volumes 72 and 73 (Hindi) and 79 and 80 (English) of the "Collected Works of Mahatma Gandhi", published by the Publications Division of the Ministry of Information and Broadcasting. He also opened the complete exhibition of books of Publications Division and allied organisations. He pointed out that these Collected Works provided reading material for the students of India's freedom struggle and portray Gandhiji's attachment to Truth and dedication to the service of the poor and the lowly

The 'Vice-President said that the 'colossal undertaking' of publication of these volumes not only discharges a debt to the architect of our freedom but preserves Gandhiji's ideas for the benefit of generations to come. Shri Hidayatullah gave a special advice to

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he students community that if they wanted to write good English they should study the writings of Mahatma Gandhi.

Perennial Significance

Shri Vasant Sathe, Minister of Information and Broadcasting who welcomed the Vice-President and other guests said : "Gandhiji's life and teaching have meaning not merely for his countrymen but for the whole mankind. Few men in history wrote and spoke with so much sincere concern on such a variety of subjects as the Mahatma did. His message is of perennial significance."

Shri Sathe mentioned that 80 out of the planned 90 volumes have already been published in English and 73 in Hindi and it was hoped that by the end of next year almost the entire work would be completed. He stated that over 1200 complete sets have been sold in English and Hindi, costing nearly Rs. 43 lakhs. Some 25 volumes have to be reprinted in English and two in Hindi and there was a programme to reprint 50 volumes. The Minister pointed out that the volumes were moderately and uniformly priced so that everyone interested in the subject could afford to buy them.

Penultimate Stage

Shri S. C. Bhatt, Director, Publications Division said that with the publication of these four volumes "the penultimate stage in the long and arduous journey which began more than two decades ago has been reached." He also said that it was proposed to hold book exhibitions in other major cities and even in small towns.

Gigantic Work

Smt. Ram Dulari Sinha, Minister of State for information and Broadcasting said while proposing a vote of thanks that posterity will be grateful to us for the gigantic work of preserving the multi-faceted teachings of Mahatma Gandhi. She said that Gandhiji not only led the freedom struggle but gave us an entire system of social development and economic growth. She announced that in addition to the emporia of the Publications Division which are at present functioning in seven cities, six more will be started and mobile book shops would also be launched. ☐

Vice President Shri Hidayatullah, who opened a book-exhibition organised by the Publications Division after releasing four Mahatma Gandhi Volumes, went round the various sections. Shri S. C. Bhatt, Director, Publications Division, is seen behind the Vice President.

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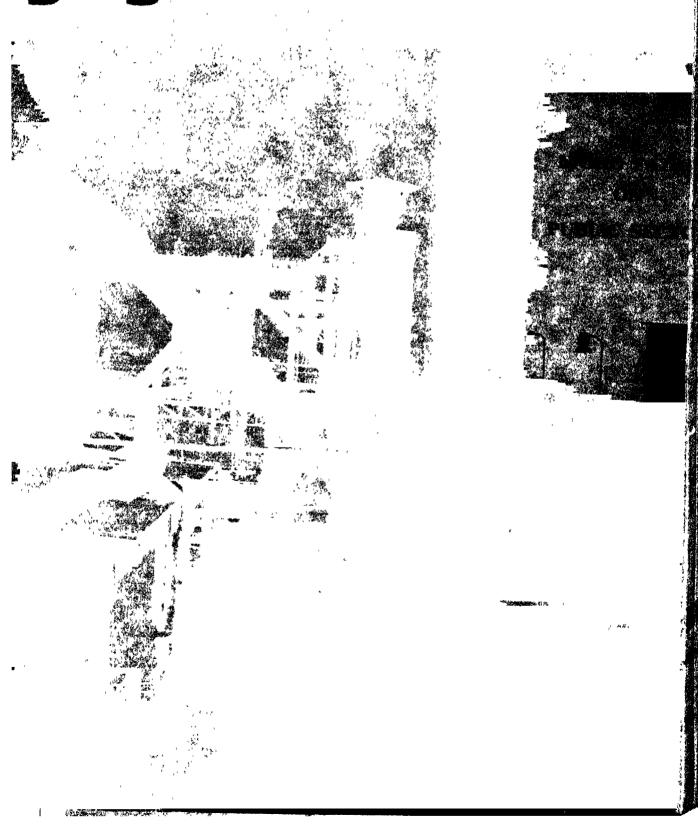
Towards Economic Recovery

Smt. Indira Gandhi*

INDIA'S problems, as those of any other country, are conditioned by external and internal factors and in today's world there are not many options open. I do not want to dwell on the past. But we must remember how the situation had deteriorated before my Government took over, whether in the country or even in the international sphere. There was the galloping fuel crisis, the cold war, the reversal of detente, arms build-up, militarisation in our neighbourhood, big power confrontation, inflation, the slowing of the dialogue between North and South, and restrictive trade barriers. All these remain as a legacy. We now have an armed conflict between Iran and Iraq.

Internally, divisive forces had grown; so had communalism and casteism which we thought we had controlled and they have reared their ugly heads again. There was denigration of higher education, of institutes of higher learning, as well as of people like scientists and so on.

The administration is recovering fast from the coma into which it had settled during the Janata Party and Lok Dal Governments. Today the direction is clear.

An item that has largely missed our press is the remarkable work that was done and the success we achieved in dealing with one of the most severe droughts that this country has ever faced.

The Plan has been finalised in record time, with the biggest ever allocation of funds with right and very clear priorities. Production in agriculture and industry has increased. The index of industrial production is steadily going up since April. Decisions have been taken much faster than at any time before to improve production, distribution and on investment. The licensing has been doubled because of the simplification of procedures. The Janata Party's and Lok Dal's utter failure to make forward investments had led to a run-down condition of the infrastructure. This has now naturally improved a great deal.

Prices

An item that has largely missed our Press is the remarkable work that was done and the success we achieved in dealing with one of the most severe droughts that this country has ever faced. Some of the drought is still there. But, that we were able to tide over this without any death, without having to import food, is quite an achievement. We also had very severe floods, especially in U.P. And I might say about the drought that the entire responsibility of it was borne by the Centre because, at that time, most of the States were under the Presidential Rule. People have come to me from all sections, not necessarily political people, and they have been full of praise, whether they are the poor or the middle class, of the manner in which the U.P. Government had dealt with it and gave relief and helped supplies to get there.

The health of the industry is judged by the machine building industry and capital goods industry largely and in these areas there is progress.

I am so acutely aware that some prices are high and the main culprits are sugar, gur, petroleum and its products. Our policy in 1976-77 had enabled sugar production to go up to 64.6 lakhs in 1977-78. But, thanks to the next Governments, the JP and the Lok Dal Governments, it came down to 38 lakh tonnes in 1979-80. Now, this is one of the main reasons why we have the shortage of sugar today. This year the crop will be better and I am told that the rate of inflation has slowed down. Our food and agricultural production outlook is good. Coal and power have shown improvement. In Industry, the legacy of the Janata Party was a significant decline in steel, cement and coal. Now, there has been a pick-up in industrial production. It began in April and since August it is firming up, especially in aluminium, copper, newsprint, even in pig iron, saleable steel, phosphatic fertilizers and some other items. I am sorry that the railways have not come up yet as they should. But they are struggling to improve and we are at it pushing them and keeping in constant touch with the situation. When we took over, 18,000 wagons were on the sick list. The health of the industry is judged by the machine-building industry and capital goods industry largely and in these areas there is progress. Port congestion has disappeared. So, overall, there is an integrated picture which has emerged.

All our stress is on producing goods and seeing that they reach the people with better distribution system.

We are trying our best to control the prices. I may tell you that the rate of inflation has come down. The major culprits are the petroleum products, sugar and gur. Sugar has a good reason because last year's production was so limited. This year, we hope, we are going to do better in that area. Some prices simply cannot be controlled, I mean all those connected with petroleum, but other things, I think that partly, of course. In today's world prices are going up and India cannot be separated from it. What other countries are

(Contd. on cover III)

*From Prime Minister's Press Conference on October 21, 1980 at New Delhi.

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EDITORIAL

The Flickering Flame

THE SEZHIYAN COMMITTEE, set up last year to review the working of the LIC, has now submitted its report, which correctly diagnoses the maladies of that organisation and prescribes drastic remedies.

It is true that the LIC has made big progress in the past quarter century. Its new business has grown from Rs. 278 crore in 1957 to Rs. 2730 crore this year; its total business has increased from Rs. 1370 crore to Rs. 19,000 crore; and its investments have grown up ten-fold. But much of the credit for this progress goes to the general economic development of the country and LIC could have advanced much more if it had made greater efforts. For example, even now only 10 per cent of the insurable males in the country are covered by life insurance and the lapse rate of new policies is as high as 40 per cent. The rural people and the urban low income groups are still left out of its ambit. The first step to attract these large sections of the people should be to lower the present high premium rates. Now that the mortality rate has been considerably reduced and LIC earns upto 300 per cent profit on a matured policy, there is no justification whatsoever to continue the high premium rates. New types of policy with provision for premium payments during harvest times may attract the rural people. Similarly easy group insurance schemes may become popular among low income people in the urban areas. But it is doubtful whether compulsory insurance of all who are covered by the provident fund, as suggested by the Committee,, will be desirable

The Sezhiyan committee has rightly pointed out that the present annual accretion to LIC of Rs. 700 crore for investment may not continue for long unless it expands its scope and activities. Due to other more profitable avenues of savings and corrosion of deposits by inflation, insurance is discounted as a means of savings. Steps should therefore be taken to make it an attractive channel of saving. LIC should also be able to earn more from its investment. At present 80 to 85 per cent of its investments are made in Government and Government-approved securities which yield low rates of interest. By making more investment in projects like public housing, LIC can not only earn more profits but relieve the acute housing shortage. The Government should also increase its rates of interest payable to LIC and, as recommended by the Committee, reduce its present five per cent share of the surplus with LIC. The high cost of administration in the LIC, amounting to 25 per cent of the premium receipts, should also be brought down. The Committee has confirmed the public feeling that the Government and LIC employees are benefited more than the policy holders and this should be corrected without delay.

Most of the defects of LIC are just the symptoms of a basic disease, viz., its monopoly position and mammoth size. In order to cure this, the Committee has suggested the conversion of the five zonal offices

(Contd. on page 34)

Public Sector in India

Mohd. Fazal *

THE rationale of public enterprises as a strong instrument of economic growth in a developing country like India stems from the extreme inadequacy of the *laissez faire* economy to which classical economists clung for long till the advent of the twentieth century. **Some economists often overlook the inherent drawbacks** in their hypotheses, which are :

(i) the frequent failure of the market price to reflect real demand ;

(ii) frequent failure of money profits to reflect social benefits ; and

(iii) failure of investment decisions based on market signals to yield more efficient allocation of scarce resources.

In a predominently rural economy, which India inherited at independence thirty years ago, vast chunks of the economy were not even monetised. To apply monetary-fiscal measures to non-monetised sectors of the economy would obviously have been unproductive. It is for these and other compelling reasons that many developing countries including India decided to use direct investment in industrial and commercial activities through public enterprises for the economic development of those countries.

Cover Photo Shows a view of Bokaro Steel Plant.

The principal "objectives" of public enterprises in India can be stated in the following terms :

(i) To promote economic development and growth ;

(ii) to promote self-reliance in strategic sectors and diversify the economy ;

(iii) to prevent concentration of economic power ;

(iv) to reduce regional and social imbalances ;

(v) to effect equitable distribution of income through social overhead capital, adopting proper employment policy and other measures ;

(vi) to generate surpluses for re-investment.

Economic Development

The investment in the public sector by way of equity capital plus loans has risen from Rs. 29 crores at the commencement of the First Five Year Plan in 1951 to nearly Rs. 16,000 crores at the end of March, 1979. The activities of the public sector are, today, spread over a wide spectrum of core sector and strategic industries. The blast furnances of public sector steel plants turn out millions of tonnes of steel ; the activity in mining covers millions of tonnes of vital inputs like coal, iron ore, zinc, copper and a host of other metals and minerals. The challenging task of oil exploration,

Sulphuric Acid plant in Gujarat Fertilisers, Baroda

both off-shore and on-shore, is critical in today's context ; huge chemical and fertilizer factories provide vital back-up to the agro-economic structure of the country. Complex engineering companies are turning out machine tools, telecommunication and electronic products, computers and teleprinters ; building ships, aeroplanes, earth moving equipment, railway engines and coaches. A number of marketing enterprises are operating within the country and overseas for import and export and commodity marketing companies in the field of contracting, and consultancy engineering are executing turn-key projects abroad ; hotel and tourist services are helping in attracting tourists and earning foreign exchange. In addition to all these are companies producing finished consumer goods such as drugs, watches, photo films, paper, surgical instruments, scooters, contraceptives, etc. This canvas presents the dimensions of the activities of the public sector in India

Apart from socialising the means of production, the public sector enterprises have generated employment for nearly 19 lakh persons whose annual average emoluments per person are over Rs. 11,000.

These enterprises have generated fixed assets, which after depreciation were worth more than Rs. 11,400 crores, at book value, as on 31st March, 1979, and their annual turnover was more than Rs. 21,000 crores by March, 1980. The ratio of net fixed assets to sales at 1 : 1.7 is a good index of capital utilisation considering that these enterprises during the last decade (1968—79) have registered a compound growth rate

* Member, Planning Commission. Excerpts from the second lecture in the Sanjay Gandhi Memorial Lecture Series, delivered on 15.10.80.

of 23 per cent compared to the annual compound growth rate of the country's gross national product of 10.4 per cent.

Self-reliance and Diversification

The public enterprises have played a big role in diversifying the Indian economy. Its range of activity today extends to some of most sophisticated industries already mentioned. It also operates in many service industries. A wide range of skills have been developed as a result.

The strategy of "import substitution" with a view to achieve "self-reliance", for which the public enterprises are used as a powerful "delivery system" in the country's economic growth, is dictated by the massive demand for goods and services which cannot be met through imports without serious balance of payments crises.

The investment in the Public Sector has risen from Rs. 29 crores in 1951 *to nearly Rs.* 16,000 *crores in* 1979.

Industries like steel, aluminium, non-ferrous metals, fertilizers, heavy engineering etc., have helped the country to save substantially on imports and create the base for industrial and economic self-reliance of the country.

The public enterprises have also directly contributed towards increased export earnings. In 1978-79 total exports of the Central Government enterprises alone accounted for about Rs. 1,900 crores The total foreign exchange earnings of the country in 1978-79 was about Rs. 5,000 crores, out of which the public sector accounted for 35 per cent.

Correcting Imbalances

From the following can be noted the percentage share of production of the public sector in various areas of the national economy:

Coal	96
Fabrics	10
Phosphatic	36
Hydro turbine	100
Power Capacitors	35
Ship-Building	100
Steel	85
Newsprint	100
Ammonia sulphatic nitrate fertilisers	100
Steam turbine	100
Telephone equipment	100
'X'—Ray films	100
Copper Ore	98
Nitrogenous Fertilisers	50
Aluminium	10
Transformers	37
Teleprinter equipment	100

The "countervailing power" which public enterprises thereby present is perhaps one of the most stabilising features in our mixed economy posed for growth in the next two decades.

The contribution of public enterprises in reducing regional imbalances as well as social imbalances in the country has been phenomenal.

The successive Industrial Policy Resolutions emphasised the need for directing special attention to the backward regions of the country. The pursuit of this policy can be seen from the disposal of investments through the public sector.

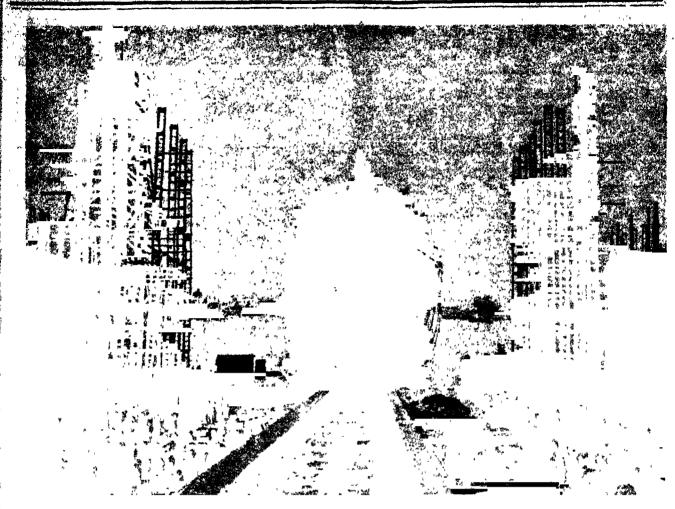
Distribution of Assets—Statewise

(Rs. in crores)

States	Investment (Gross Block) as on 31-3-79	Investment as on 31-3-72
(1)	(2)	(3)
1. Bihar	2877.02	1064.2
2. Madhya Pradesh	1846.13	609.9
3. West Bengal	1082.88	518.0
4. Maharashtra	916.56	146.5
5. Gujarat	762.24	175.6
6. Orissa	710.28	35.3
7. Uttar Pradesh	658.12	481.5
8. Tamil Nadu	615.78	343.7
9. Karnataka	529.82	113.2
10. Andhra Pradesh	513.89	127.0
11. Delhi	427.82	—
12. Kerala	382.68	137.1
13. Assam	382.68	126.8
14. Punjab	344.52	35.3
15. Rajasthan	291.97	56.3
16. Haryana	213.90	8.3
17. Himachal Pradesh	107.55	0.3
18. Jammu & Kashmir	6.20	..
19. Goa	5.35	..
20. Other States/Union Territories	130.24	
21. Unallocated	2802.24	
	15667.93	

The public sector has an implicit and often and explicit obligation to set standards in its dealings with its employees. This requires the enterprises to provide housing, health, education and recreational facilities which are generally much above the national standards. The burden of this responsibility often goes unassessed. The contribution made by the public enterprises towards a more equitable distribution of income, and providing social overheads can be seen from the following relating to the average expenditure incurred on employees in the public sector.

(In Rs.)

	1968-69	1978-79
Average emoluments of public sector employees (Rs. per annum)	4264	11031
Average expenditure per employee on welfare (Rs. per annum)	420	701

A Ship is launched at Hindustan Shipyard, Vishakha patnam

Workers' participation at the shop floor and plant level has been accepted as a part of the objectives of a model employer by the public sector. Measures are in hand to intensify workers' participation at the highest managerial levels.

Return on Investment

An analyais of the performance during the period 1968-69 to 1978-79 indicates that the public sector enterprises had, in fact, earned a gross profit of Rs. 9013 crores including provision of depreciation. Over the years, the percentage of gross margin of public sector to capital employed has increased from 7.5 per cent in 1968-69 to 12.5 per cent in 1978-79. These gross margins have been the resources generated by the public sector for the overall development of the economy.

The Public Sector's annual turnover was more than Rs. 21,000 crores by March, 1980: the growth rate of turnover is 23 per cent compared to the 10.4 per cent of GNP.

The return of the private sector enterprises calculated on the basis of gross profits to capital employed is around 11 per cent. The term "capital employed" included all assets, fixed assets as well as current assets, which is higher than the figure of "capital employed" used in the Bureau of Public Enterprises data where current liabilities are taken out from current assets Thus, the profitability ratio of approximately 11 per cent shown by the private enterprises in respect of large companies employing over Rs. 1 crore capital, used in Reserve Bank of India and *Economic Times* data, is often an under-estimation of the real profitability index. But if it is considered that over 70 per cent of the goods and services sold by the public enterprises are subjected to administered prices and if the multi-dimensional goals of the public enterprises are taken into account, and also the fact that public sector operates in the core sectors of the economy, then a return of 10 per cent on the capital employed, which was the achievement of the public enterprises in 1978-79 (excluding the coal enterprises) would appear to be satisfactory.

The immense requirements of our development have necessitated a re-orientation in our approach towards public sector in many ways. Firstly, while the achievement of non-financial objectives will continue to be important, these enterprises will have to generate greater resources for the financing of economic development. The most important manner in which this has to be achieved will be by a significant contribution towards better management. Capacities which have been set up have to be fully used. There has to be a tight reign over costs of production. This will be the major

(Contd. on page 18)

Inflation, Unemployment and Growth

L. K. Jha*

INFLATION represents a situation in which there is an excess of demand over supply. In India, the gap is typically caused by a sharp drop in supplies rather than an upsurge in demand. When the monsoon fails, there is an acute shortage of foodstuffs as well as of key industrial raw materials. Their prices shoot up, even though money incomes in the rural economy suffer a decline, with a reces ionary impact on the industrial sector. Thereafter an un-premeditated but unavoidable monetary expansion follows. Outlays on drought relief and increased dearness allowance to government servants enlarge the budgetary deficit. Money wages of industrial labour have to be raised, pushing up costs and prices. Borrowings from banks on account of working capital have to go up. Monetary expansion is often the effect and not the cause of inflation in India, though once the inflationary spiral starts it is not easy to distinguish between cause and effect.

On the demand front there is a long term upward trend in India, arising out of biological rather than economic factors. As population increases, the demand for the means of subsistence goes up, regardless of monetary policies. Even those who earn no money must consume a certain amount of food, if nothing else, to be alive. Side by side the free educational and medical facilities made available by the State raise the demand for books and stationery, drugs and medicines Further, some of the rising generation, who succeed in getting jobs, begin to consume a wider range of goods, the so-called wage goods. Based on the present rate of increase in population and job opportunities, I would hazard the view that the demand for basic goods is increasing by at least 3 per cent per annum without a matching increase in the supply of such goods, prices must rise. A certain minimum increase in output is necessary not for progress but just to preserve per capita incomes. We are in an Alice-in-Wonderland situation; we have to do a lot of running in order to stay where we are.

Past Experience

My emphasis on the supply of the basic essentials of life rather than monetary factors in order to ensure price stability is borne out, I believe, by a careful review of our past experience. The sharp step up in defence expenditure following the Chinese attack, led to a price rise averaging less than 8 per cent per annum between 1962-63 and 1965-66. But despite a major cut back in government's investment in 1965-66, crop failures pushed up the rate of inflation to 16 per cent in 1966-67 and 11 per cent in 1967-68. In 1970-71 and 1971-72, the inflation rate came down to less than 5 per cent a year because of good crops, even though money supply was expanding much faster than in the mid-sixties. But in the following two years with a decline in food production prices flared up again. In 1975-76 with a very good harvest prices began to decline, even though monetary expansion was above the preceding year's level.

Let me now turn to the present inflation. Although there was an increase of 14.5 per cent in money supply in 1977-78 and of 18.8 per cent in 1978-79 the price rise during the 12 months prior to the 1979 budget was less than 2 per cent. But immediately following the 1979 budget, prices began a meteoric rise which has been continuing. There are many who place the entire blame for this flare up on the huge amounts of deficit in the preceding two years—which grew bigger in 1979-80. But let us go a little deeper.

To no small extent increases in the costs of a number of key commodities contributed to the rise in prices. We all know about the rise in oil prices. In addition the controlled prices of products like steel and coal had to be raised because their costs had gone up. Because of previous attempts to resist and postpone a price revision for as long as possible, the increase, when conceded, had to be substantial. The 1979

Monetary expansion is often the effect and not the cause of inflation in India, though once the inflationary spiral starts it is not easy to distinguish between the cause and effect."

budget also led to wide ranging increases in costs and prices, specially as indirect taxation of inputs has a cascading effect. So a good part of the inflationary upsurge can be said to be of a cost-push and tax-push character.

But let us not ignore the key role of supply factors. In 1978-79 there was a decline in the price of many food articles because of conditions of surplus—the price of sugar alone registered a decline of 15 per cent—which offset the rise in the price of cement, steel, rubber, basic chemicals, tyres and machinery ranging from 7 to 44 per cent. From the beginning of 1979, supplies in general began to shrink. The index of industrial production became negative, as against an overall rate of growth of about 8 per cent in the 70's. The drought of 1979 created shortages of foodstuffs. While the availability of wheat and rice could be sustained by releasing stocks with the Food Corporation, the prices of various edible articles particularly vegetable oils and sugar began to soar. The economy was firmly in the grip of inflation.

How to Reduce Prices

The acute distress which it is causing cannot be relieved by fiscal and monetary curbs—not even by a

* Eminent Economist and Governor, Jammu & Kashmir. From the Valedictory address to the Diamond Jubilee of the Associated Chambers of Commerce and Industry in India on 21-8-1980

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Plan holiday. To reverse the price trend we must make a massive effort to augment the stream of supplies, particularly the supplies of basic essentials like foodstuffs. Luckily the monsoons are encouraging. But we have to pay special attention to the crop pattern. One of the distortions in the output of food products is the divergence between production trends and consumer demand. While of foodgrains we have surpluses even in drought years, in other areas, like oil seeds, we have shortages even when monsoons are good. This is largely because while rice and wheat have assurances of a minimum price, the policy in respect of vegetable oils, pulses and sugar etc., has its emphasis on keeping prices down. An integrated price policy, appropriately backed up by scientific research and adequate supply of inputs and credits, should be evolved immediately, so as to influence sowings and ensure an optimum utilisation of land to provide food for the people.

The acuue distress which inflation is causing cannot be relieved by fiscal and monetary curbs—not even by a plan holiday. To reverse the price trend we must make a massive effort to augment the stream of supplies, particularly the supplies of basic essentials like foodstuffs

On the industrial front we must embark upon a policy of getting maximum output from existing capacity. This would mean that all official restrictions on maximising production out of installed capacity must be abolished. If any restrictions are to continue, they must be immediately submitted to a review by a non-bureaucratic high-powered body. Often low output and poor performance are the result of bad management—internally by the enterprise and externally by the Central, State and Municipal authorities, with their plethora of controls and controllers. The bureaucracy must learn to control itself, curbing its own growth for a change, managers must manage better or quit. A major tripartite initiative to eliminate the fantastic number of mandays which are lost each year due to strikes and lock-outs should also be simultaneously launched.

I am not, in saying all this, condoning recklessness in fiscal or monetary politices. A situation of excessive monetary demand can and does raise prices. But usually such demand impinges not on the basic necessities of life but on the semi-luxury and luxury products. As a rule, increase in money supply raises the incomes of those who are not without food and clothing. When there is an imbalance between the demand and supply of the basic necessities of life, contraction of money supply will not reduce the demand for them, unless it is carried to the point of creating large-scale unemployment. If augmentation of supply by domestic production or imports is impossible and a cut in demand is the only way by which the situation can be managed, the best way to reduce demand would be to introduce rationing of some kind, so that the cut in consumption is shared equitably and does not fall on the poor alone.

Such an attempt to fight inflation need not cause unemployment or slow down growth. A determined effort to step up production and supplies will begin to create new job opportunities. As existing units work full blast, power plants generate more electricity, the collieries raise their output, the railways carry more tonnage, factories resume full working adding extra shifts where possible, the farmers have larger crops, and as, in addition, new investments are made, employment will begin to rise. But some thing more is needed. Employment generation must be speeded up to keep pace with the steady increase in the number of job seekers.

Jobs without Inflation

But the fear of inflation comes in the way of the pursuit of vigorous employment generating policies. When the jobless get employed, they begin to consume more. Increased demand can push prices up and lead to a price rise. Conventional economic wisdom therefore ordains that in order to aviod inflation, the increase in demand due to the payment of wages should be offset by corresponding cuts in demand in other sectors—usually through taxation of the upper income groups. Here again I would urge a different approach in Indian conditions.

With our wide disparities in income and patterns of consumption, the products for which the demand goes up, as new jobs come into being, are very different from those whose demand goes down, as taxes are raised. The most important item on which the worker spends his wages is food. But food is the one item whose consumption is not curtailed by people when taxes are raised ; they would rather cut down their expenditure on other things. Price stability when a boost is being given to employment cannot be assured by fiscal measures which operate on aggregate demand. Along with measures to raise the employment level, the supply of wage goods has to be stepped up, if price stability is to be maintained. If wage goods, particularly foodgrains, are in abundant supply, an increase in employment would not have an inflationary impact It was this line of thought which had led me in November, 1976, when there was some talk of exporting foodgrains because their stocks were mounting and storage space was short, to put forward publicly the idea of the food-for-work programme. It was adopted by Government and, despite initial difficulties, socially no less than economically, it has been a success Its scope could well be widened by including items other than foodgrains.

Growth with Little Money

I now turn to growth. If there is validity in my line of reasoning then, both in the interests of price stability and to create job opportunities on an adequate scale

The bureaucracy must learn to control itself, curbing its own growth for a change, managers must manage better or quit

we must aim at a high rate of growth—not just growth in general, but especially of products which satisfy the consumption needs of the wage earners. What they should be is clearly a matter of opinion. Obviously we must include in them the principal foodstuffs, by which I mean not only foodgrains but pulses, vegetable oils and sugar. To take care of the needs for clothing, shelter, education and health, the growth rate in textiles, cement, paper and drugs will need to be raised. Since these products are also of the highest interest even to

the middle classes, as their supplies improve much of the prevailing public discontent, which breeds disenchantment with the whole development process, would begin to disappear.

Any talk of a higher rate of growth immediately raises the question of resources. We have brain-washed ourselves into believing that saving is the major resource bottleneck and higher taxation is the only way to augment it. Let us think afresh.

The factors influencing the rate of growth, in different periods in the same country and in different countries over the same period, have in the recent past been analysed in some detail. Research by the Brookings Institution in the U.S. has led to the finding that capital accounted for less than 1|5th of the growth rate in the U.S. between 1948 to 1969. Other factors, like improvement in labour output, had a definitely higher ranking than capital in contributing to the increase of GNP. Again between 1953 and 1971, Japan, West Germany, France, Italy, Netherlands, Canada, Belgium, Denmark and Norway achieved higher rates of growth than the U.S. But in no case did capital account for even half of the difference ; in some important countries capital played no part in their achieving a better rate of growth than in the U.S.

If wage goods, particularly foodgrains, are in abundant supply, an increase in employment would not have an inflationary impact.

Looking at our own experience, the rate of savings in India has peaked to a level of 22 per cent, which compares favourably with the performance of richer countries. Yet in 1979-80 we had a negative growth rate. In fact our growth performance was consistently better when our capital formation was only half as high or even lower. The low ebb of economic activity in recent years compared with the past, despite rapidly rising levels of savings, must encourage us to get out of the syndrome of an inflexible link between capital and growth. The most tragic aspect of the Indian economy today is the very poor return we are getting out of the investments made, not just financially but in terms of physical output. It is my firm belief that without raising the tax burden, through greater attention to the human factors like management, labour, productivity and technology, we can step up the rate of growth, which incidentally will result in higher revenues without an increase in tax rates.

If there was a conscious policy decision to aim at higher growth without higher taxation, the focus of attention of all those responsible for the formulation of economic policies and procedures would shift to measures to maximise the *yield* of investment rather than the *Volume* of investment. In the process, labour-intensive industries would automatically begin to get the priority they deserve. For such a strategy to be acceptable it is necessary for the community as a whole to have different yardsticks for the evaluation of Plan priorities. At present both in Press and in Parliament, the funds allocated to different ministries are often used as the measuring rod of the relative importance which the planners and the government attach to different sectors. Performance is assessed by asking whether the funds allocated have been spent fully, or whether there have been surrenders. Even the role of the public sector in the economy is judged by its size and not its contribution to the production of goods and services. The discipline of not relying on higher taxation will automatically throw up the importance of the public sector generating surpluses to finance its expansion. For the public sector to occupy the commanding heights of the economy, it has to be strong enough to stand on its own feet and make contributions to the exchequer rather than rely on subventions from it.

Men, the Prime Movers

Let us stop pricing the kind of emphasis that we have been doing on the passive and inert resources, particularly capital, for purposes of growth. Let us rather turn our attention to dynamic human resources, and make them the prime movers of our developmental effort. Let us not go on raising tax rates or indulging in hidden taxation, through excessive deficits at the Centre and unauthorised overdrafts from the Reserve Bank in the States. Let us instead make labour more productive by improving the workers' skills, health and education. Let us make management, both in the public sector and in the private sector, more efficient by putting capable men at the helm, regardless of their links with particular families or particular bureaucratic tribes. Let us encourage rather than discourage higher profits, which come out of greater attention to costs and minimising the waste of capital, rather than have a cost-plus approach to pricing. Let us make governmental policies and procedures, the price policies and regulatory policies, the taxes and the subsidies, the licences and the controls, subservient to the objective of getting the maximum output from each unit of capital invtsted. In the early years of planning we needed about 3.5 units of capital to get one unit of output, the present ratio is more likely to be 6 : 1. For the success of the effort we must harness the technological, managerial entrepreneurial and working class skills that we have built up, which seem to flourish and do great things around the world, in developing countries and developed countries, but feel thwarted and constricted in their homeland. More liberty and less licence will release their creative capabilities.

It is my firm belief that without raising the tax burden, through greater attention to the human factors like management, labour, productivity and technology, we can step up the rate of growth, which incidentally will result in higher revenues without an increase in tax rates.

I have been urging special priority for basic consumer goods in our growth effort. To raise their output what is needed is not heavy additional capital investment, but the kind of price policies remunerative to the producer which paved the way for the breakthrough in wheat and rice production. Accelerating the growth rate for basic goods would go a long way to strengthen our foreign exchange position. If there are shortages of these items we are compelled to import ; if we have surpluses we can readily find export markets. Without an adequate rate of growth in this sector, our balance of trade will suffer a major setback. Already we have ceased to be exporters of vegetable oils and turned into importers. Sugar exports can only be made at a considerable sacrifice. A marginal increase in the per

capita consumption of things like tea and textiles may play havoc with our export earnings, at a time when, with rising oil prices, our foreign exchange reserves are getting depleted.

Priority for basic consumer goods does not mean that our past emphasis on machine building and heavy industries was misplaced. As one who was personally involved in the evolution and implementation of economic policy during the first three Plans, I have no second thoughts on the subject. To sustain the growth rate in basic consumer goods additional investments in the necessary producer goods, in machine building and basic chemicals, in fertilizers and pesticides, in power generation and new sources of energy, in rail and road transportation, will continue to be necessary. But these cannot be an end in themselves. The capacity we build up should be such as is needed to increase the availability of things which people need, or for directly catering to export demand. What makes me sad is that so much of machine building capacity built up at such cost is remaining grossly under-utilised, quite often because permission to instal the machinery which they can produce is not forthcoming.

It is one thing to ask people to put up with shortages which cannot be removed. It is quite a different thing to perpetuate shortages when surpluses are within our reach. The potential we have built up must be matched by performance. The achievements we strive for must synchronise with the aspirations of the people. We cannot relieve mass poverty merely by transferring money incomes from the rich to the poor. Unless we produce more of the things which the poor need and which the rich also will anyhow continue to consume, a redistribution of income will merely raise prices.

Let us not look upon inflation, unemployment and growth as separate autonomous processes. What we do in respect of one inevitably has repercussions on the other two. What we need is an integrated strategy for stability, employment and growth each reinforcing the other two instead of running counter to them. □

Energy Research for Developing Countries

Roger Revelle*

ENERGY programmes and energy research with a special emphasis are required to deal with critical situations in the developing countries of Asia, Africa and Latin America. The energy situation of the non-oil-exporting developing nations is likely to deteriorate unless a concerted effort is made. A prerequisite for any energy strategy is an inventory of a country's energy uses and needs and the natural resources available to meet these needs.

Systematic searches for petroleum, natural gas, coal, uranium and other deposits should be undertaken, using modern geophysical and geochemical techniques.

Coupled with the scarcity of wood is the inefficient manner in which wood is now used—where it can be found. In Asia, for example, much wood is burned wet, using valuable energy to drive off steam rather than supply cooking heat. The problems and solutions are complex. Research and development are required in each of the developing countries where trees can be a primary source of fuel. Reforestation is a necessity, of course. And high yield, fast-growing trees are one answer. But should, for example, the ecology of the tropical forests be altered by replacing indigenous species with high-yield trees? Which trees are best suited for particular soils, climate and topography ? These are some of the questions that research could answer.

* Professor, Science and Public Policy at the University of California at San Diego.

A variety of such trees have been discovered in recent years in different parts of the world. Among them is the 'Hawaiian giant' or the Salvedoran variety of the evergreen tropical legume, 'Leucaena leucephala'.

The 'leucaena' is especially well-suited for humid and semi-humid lowland tropics. It is able to withstand long dry seasons and tolerate a wide array of soil conditions—except it does not grow well in very acid soils or at high altitudes. The stumps readily regrow, defying the wood cutter. And the tree can tolerate moderate shade and does not excessively shadow lower plants. Further-more, the leaves are good fertilizer. It has been estimated that six bags of 'leucaena' leaves contain as much nitrogen as one bag of expensive ammonium sulphate fertilizer made from fossil fuels.

Charcoal is preferable to wood as a household fuel. It converts two to three times more energy to heat than wood; it creates less smoke, and it is easier to transport.

Charcoal is made from peanut shells and sawmill wastes in Georgia in the United States, from rice husks and the wood of mangrove forests in Thailand and from coconut husks in Sri Lanka, to mention a few. Research and development are needed to adapt existing highly-efficient charcoal kilns, which convert 50 to 60 per cent of the heat energy from the feedstock into usable energy but operate on a large scale, to smaller kilns that can be used in villages or by households.

Indonesia has developed equipment to convert rice hulls and straw to charcoal, oil and gas; efforts could be made to adapt this kind of equipment as well for use in villages throughout the developing world.

(Science News)

Need for an Environment Department

Digvijay Singh*

OUT of all the natural endowments, first let us take the soil into consideration. It is an organic nutrient which has taken millions of years to build up. One inch of top soil can take upto five hundred years to evolve and due to our carelessness we can lose it in just one flood from a river. It is estimated that somewhere around six thousand million tonnes of this precious commodity is annually lost by water erosion through the silt carried by our rivers. This may be worth, in terms of money, much more than 1,200 crore of rupees worth of assets lost every year.

It is estimated that somewhere around six thousand million tonnes of precious top soil is annually lost by water erosion through the silt carried by our rivers. In terms of money, it amounts to losing more than 1200 crore of rupees worth of assets every year.

A recent survey illustrates that out of a total of 304 million hectares of land which comprises India, somewhere around 175 million hectares are threatened by erosion. Out of this about 90 million hectares are in a critical condition. If 175 out of 304 million hectares, which would mean about 60 per cent of our land mass, needs treatment, how sick is our Mother India

As a result of this erosion our land has been laid bare, the water level has gone down, reserviors and deltas have been silted up and the climate has altered.

Photographs taken from satellite have discovered that an embankment 50 kilometres by 50 kilometres, has arisen from the waters of the Bay of Bengal due to the deposit of silt.

The paucity of India's forest cover is borne from the fact that of the 75 million hectares classified as forest land, less than half of it is under adequate tree cover and as much as 20 million hectares of forest land is estimated to be affected by erosion. No more than about 12 per cent of the country's land surface is actually under adequate tree cover as against a target of 33 per cent prescribed in the National Forest Policy. Further, about 30 million hectares are classified as permanent pastures, but in reality they are overgrazed and hopelessly encroached.

The country can hope to achieve improvement in agricultural productivity only if the problems of land degradation are tackled with utmost vigour.

*Member of Parliament and Member, National Committee for Environmental Planning.

As far as the natural living resources of insect life, bird life, animal life and plant life are concerned, India is endowed with an immnse variety of living resources. The rising pressure of an exploding population, the unplanned development of the natural environment and the greater need to exploit the wild living resources has resulted in the incalculable loss of this natural heritage. Pristine forests almost do not exist in India and those that exist have lost much of their wild life heritage. One can conservatively say that perhaps we have lost nearly 90 per cent of our larger wild animals, 75 per cent of our smaller wild animals and 60 per cent of our game birds since independence. Although we have comprehensive Wild Life Protection Act 1972 it languishes because of the lack of public support.

As far as the marine eco systems are concerned lately there has been much plundering from trawlers both of Indian origin and from abroad; so much so that fish resources in the territorial waters of India are being depleted at an alarmingly fast rate.

All told, only 19 Nationanl Parks and 202 Wild Life Sancturies have been set up in the country representing 2.25 per cent of the geographical area. A suggestion has been made to have Biosphere Reserves both on land and marine but these are still in a formative stage.

Polluted River and Air

The other vital asset of this planet is fresh water, which is also taken for granted. The waters of our rivers are perhaps more polluted with both silt and human wastes than that of any other river in the world.

To add to this, the effect of industrialisation in the country is also now being felt in many areas of the country. And even the mighty rivers like the Ganga, Jamuna, Narmada and others are being polluted at a rate far beyond our comprehension. To counteract this the Water Pollution Control Bill was passed and myself being a Member of the Board, I know the practical difficulties that are encountered

From a satellite it has been recently discovered that an embankment of an area of 50 kms by 50 kms has arisen from the waters of the Bay of Bengal which is due to the deposit of silt.

The Board has taken action against some individual industries for chemical pollution but it is very hesitant to take steps against municipalities for political reasons. And therefore, one has to go to the Thana Creek, Hoogly, River and even the Sangam at Allahabad to see that what human negligence has done to our river system.

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Only Ahmedabad, Bangalore and a few smaller towns of India have a somewhat efficient sewerage and sewage treatment facility. Other cities of India have no qualms to discharge their waste into the rivers without concern.

The other vital asset of the earth is the air enveloping the planet. Altough pollution of the air is a natural corollary of industrialisation but in the case of India human pollution of the air from households is also incredible. The National Environmental Engineering Research Institute confirms the levels of Sulphur Dioxide and Carbon Monoxide sustainable by human life and the reports from many cities including Delhi itself, are alarming.

Remedy

To checkmate this devastation, there can be no more effective step than to create public awareness. It is interesting to note that in developed countries like USA somewhere around two per cent of the entire population is affiliated to some society organisation, institution or pressure groups, which can influence both the Government as well as the society at large for concern for the environment. Our goal in India should be that if at least (.1) point one per cent of the entire population of India was affiliated to such a movement, much of our problems would be solved. A concerted drive should be carried out to bring about such public participation and the Government should subsidise such organisations.

The 14-Member Expert Committee, chaired by Shri Narain Dutt Tewari, Minister for Planning of which I am a Member, submitted its detailed port on the 17th September. The main recommendation of this Report is that there should be a Department which would carry out the responsibilities of conservation of the resources, monitoring and regulation of pollution. It should play the role of a watch dog and effect proper coordination.

Today the various wings of the Government of India do not coordinate in executing development plans to consider the environmental aspects. It is the lack of such coordination which has resulted in projects like the Silent Valley and the Mathura Refinery reaching a stage of finalisation. In 1975 Environmental Councils and Land Use Boards were set up in all the States with the Chief Minister of each State as Chairman. Most of them have not even met and there is no coordination between the National Committee and the State Committees, let alone between one State and another. The forthcoming Department would stimulate interest amongst the States to see that this was effected

There should be a department which could carry out the responsibilities of conservation of the resources, monitoring and regulation of pollution. It could play the role of a watch-dog and effect proper co-ordination.

The other activities of the proposed Department would be to manage water pollution control, wild life and other activities which the present administrative set up is not doing efficiently. But the most important thing that this department could do would be to have an administrative set up which would make detailed environmental impact studies before any large development project is undertaken. Such activity in India is today unknown.

When the administrative set up is established, a concerted drive would have to be undertaken to create public awareness and to develop an attitude of being concerned for the future. After all, the stage of consciousness of human society is so much evaluated by the capacity to think for the future. □

(Courtesy : A.I.R.)

Industries Pollute many rivers

MERCURY poisoning and chemical effluents are destroying aquatic life in many rivers in India. According to an international report the Chaliyar river in Kerala has a high level of mercury discharged from the nearby rayon factory. This has infected the river's fish which is the most popular diet in surrounding villages. Mercury poisoning is also evident in Orissa's Rushkulya river and the Thana creek near Bombay. Contamination of the river Kalu, near Bombay, accounts for the high level of toxic mercury found in the fish, milk and vegetables. They also apparently contain lead, cadmium and copper in amounts that could prove injurious to life.

Rajasthan's Water Pollution Control Board, the report says, has complained that the towns are imperilled by industrial effluents. Udaipur's beautiful lakes have been infected. The Chambal river is heavy with mercury, sulphur, zinc and sodium and its plight will worsen when work is completed on the Kota thermal power plant, which will scatter ash over a 10-km radius and substantially increase the level of chlorides and sulphates in it. The Ganga is the most polluted river at the holy city of Banaras on account of contamination from the river side cremation grounds. It is increasingly being choked with pollution. But the length and size of the river, and the constant flood of melting ice from the Himalayas, dilute poison to some extent

This is not so in the case of West Bengal's Damodar which has turned black due to pollution, or the Chaliyar whose colour has turned brown.

Rivers and streams in Madhya Pradesh have turned into septic drain. About 220 factories produce more than 150 million gallons of waste. In Indore, the Khan receives nine million gallons of sewage, sullage and toxic waste of half a dozen factories. It is the only source of drinking water for the 18,000 inhabitants of 23 villages. That is why gastro-enteritis is a common ailment here. □

The New Concept of Economic Federalism

Chetan Chadha*

THE new Industrial Policy Statement of the Government has so far been noted mainly for the various steps outlined to encourage the growth and capacity utilisation of large and organised industries. But what has not been probably appreciated fully is the new deal it gives to the small and decentralised sector of industry.

Apart from raising the investment limits for small and tiny industries as well as for ancillaries, the new policy promises a major thrust towards the development of such industries through the mechanism of what has been termed as the "nucleus plants". The concept of nucleus plants is much broader than that of the district industries centres mooted by the former Janata Government. A district industries centre was conceived basically as an extension agency or a consultancy organisation to promote small industries in rural areas. It was intended to provide under one roof the various facilities of credit, raw materials, marketing consultancy and general entrepreneurial guidance. But a district industries centre remained only an extension of the administrative network. Such an agency therefore, could at best become a service agency rather than provide a motive force for generating new entrepreneurship.

Under the scheme of nucleus plants, what is proposed to be set up is not another administrative agency, but new complexes of small industries with the nucleus units serving as developmental and promotional centres.

On the other hand, under the scheme of nucleus plants, what is proposed to be set up is not another administrative agency, but new complexes of small industries with the nucleus units serving as developmental and promotional centres. These nucleus plants could provide all the extension and technical services and inputs as well as the marketing support to the small industries falling within their purview. Unlike a district industries centre, a nucleus plant could be more effective in creating the desired spread effect. For this simple reason a nucleus plant would be organically linked with the small units and there would be complete inter-dependence between a nucleus plant on the one hand and its various ancillaries on the other.

Ancillary Role

A few years ago, noted West German banker industrialist, Dr. Abs, was in this country. Those were the days when efforts were being made by the then ruling Janata Government to push through its plans for small industries development. At a meeting of industrialists and heads of financial institutions, Dr. Abs was asked as to how his country could help India in these efforts. In his characteristic frankness, Dr. Abs shrugged his shoulders and said that he was at a loss to understand the meaning of the whole exercise. For, as he knew it from his experience in West Germany, small industries flourished only as ancillaries.

It is precisely this emphasis on ancillarisation that forms the basis of the whole concept of nucleus plants. The Union Minister of State for Industry, Dr. Charanjit Chanana, who has put forth this concept is known for his dynamic views on development of small industries. In his words, "the small is beautiful when it is growing : it is not when it is a dwarf. His philosophy of decentralised industrialised growth is fully reflected in the industrial policy statement which says that "just as the phased manufacturing programme with a view to reducing reliance on imported components and materials played an important role in diversifying our industrial structure, a carefully worked out time-bound programme for greater ancillarisation in certain industries will contribute considerably towards dispersal of industry and growth of entrepreneurship."

Elaborating the concept of nucleus plants, the statement points out that a nucleus plant would concentrate on assembling the products of the ancillary units falling within its orbit or producing the inputs needed by a large number of smaller units and making adequate marketing arrangements. The nucleus plants would also work for upgrading the technology of small units.

The Union Industry Ministry is reported to be working out details of the scheme to promote nucleus units in selected backward districts. But it has been made clear that these nuclei could be set up either by the Central and State Government agencies or by the private sector. Even at present various concessions are available for locating industries in backward areas. But now an important yard-stick for offering such concessions is likely to be the ancillarisation impact.

It is interesting to note that rather than talking of decentralised industrial growth, the new policy statement underlines the objective of "economic federalism". This gives an idea of the new perspective envisaged for the future growth of small industries. The policy statement says that it is proposed to promote the concept of economic federalism with the setting up of a few nucleus plants in each district, identified as industrially backward, to generate as many ancillaries and small and cottage units as possible.

(Courtesy All India Radio)

Financial press

Behind the vast network of rural cooperatives, is the dedicated work of

NCDC

Working to give a firmer, stronger base to the cooperatives, is the NCDC. Promoting vital aspects of the agricultural economy, right from feeding agricultural inputs to storing and marketing the produce from processing agricultural products to distributing essential goods.

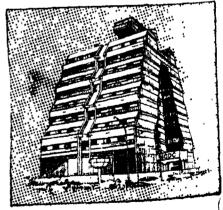
NCDC has now embarked upon an intensive programme for multi-purpose rural cooperatives to strengthen the village societies. The programme envisages providing much-needed godowns for the surplus produce.

These focal-point storage godowns will serve as growth centres; will provide essential inputs such as fertilizers, seeds, pesticides, farm equipment, essential consumer goods, credit facilities. In fact, will strive to meet most of the farmers' needs, all at his doorstep. This programme is already underway with aid from the World Bank and the European Economic Community. More aid is in the pipeline as are more projects.

NCDC feels proud to have promoted cooperative organisations such as IFFCO, NAFED, PETROFILS and many more, which are playing an increasingly important role in the national economy.

NCDC has launched special programmes to promote cooperatives for the weaker sections of the society such as fishermen, weavers, scheduled castes and scheduled tribes.

Over Rs. 330 crores have been pumped in by the NCDC into the cooperative sector so far.

Projects become realities mainly with people's participation and NCDC is promoting it.

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A Case For the Abolition of Octroi

S. P. Jalan*

THE Shipping and Transport Minister, Shri A. P. Sharma very recently indicated at the Transport Development Council Meeting that Government would abolish octroi. The idea is not a new one, but the progress towards a national policy on this issue has been rather slow and disappointing.

Octroi is a tax on the entry of goods into a local area for consumption, use or sale. Today, it accounts for 25 to 30 per cent of the revenue of municipalities and municipal corporations.

Earlier, the Indirect Taxation Enquiry Committee (Jha Committee) 1977 had very strongly recommended the abolition of octroi. It suggested that octroi should be substituted by a suitable levy. Earlier many committees like the Keskar Committee, the Masani Committee, the Transport Development Council Committee on transport policy and coordination and the Rural-Urban Relationship Committee gave verdicts against octroi. And yet, the octroi remains.

Octroi obstructs quick transportation of goods and thereby denies the national economy an important advantage of today's roadways—the speed. For example, according to Keskar Committee, on the 400 km Mangalore—Bangalore route a motor vehicle had to spend 45 hours 10 minutes of out of which 36 hours were on account of detentions. Even if managed honestly and sincerely octroi is costly to collect and loopholes are difficult to plug.

Speed Breaker

The method of assessment and collection of octroi definitely imposes a heavy cost on the community. It obstructs quick transportation of goods and thereby denies the national economy an important advantage of today's roadways—the speed. For example, the Keskar Committee found that on the Mangalore—Bangalore route of 400 Kms., a motor vehicle had to spend 45 hours 10 minutes out of which 36 hours were on account of detentions. It is a matter of common knowledge and experience that the detention time mostly ranges from ½ to ¾ of the total transit time on several routes.

The reasons for this phenomenon are many. Among them, the most important is the big number of checkposts (halts) because almost every municipality levies octroi. Then, the ill-equipped checkposts. Normally there are only two persons to man it—a clerk and a chowkidar. No additional hand is available for loading and unloading of goods. There is also no suitable space for it, the checkpost being on roadside. Now, suppose some 10 trucks loaded fully with different mercandise goods heading to different destinations for several consignees, arrive simultaneously at a particular checkpost. Will it not be a herculean task for the clerk and chowkidar to see, to check, to confirm and verify each and every item of the truck-loads—in order to assess and levy the tax properly ? Will it not consume several hours of the clerk and the driver ?

Fertile Source of Corruption

Normally, at such times, the discretionary powers of the octroi staff come to their rescue. They just decide everything within 15 minutes. The element of discretionary powers leads them to arbitrariness and virtually arms them with a freedom to cause irritation, harassment, delays and overcharging. And that explains prevalance of corrupt practices in the sphere on the one hand and leakage of the revenue on the other hand.

Sometime back, the octroi collection staff of the Bombay Municipal Corporation went on a strike. The Home-guards were asked to man the checkposts. And this resulted in a spurt of octroi revenue to the tune of lakhs of rupees per day. This instance corroborates the Keskar Committee views on octroi. It says that the octroi is "a fertile source of corrupt practices".

Costly

Even if managed honestly and sincerely, octroi is costly to collect and loopholes are difficult to plug. Octroi is an anachronism today—a discredited remnant of the outworn system. It involves not only the wastage of time but also of the fuel consumed by the idling engines of the transport vehicles waiting at check-posts. According to a review of the National Council of Applied Economic Research, the fuel consumed while vehicles waited at the numerous checkposts amounted to 10 per cent of the total fuel used. This fuel wasted amounts at least to five lakh kilolitres per annum. With the crunch on oil prices growing almost every quarter, the necessity to conserve fuel by eliminating the obstruction at various octori checkposts must be taken up seriously.

According to one statistical estimate the road transport is six times costlier than rails. And the role of octroi in making it so is quite prominent. The frequent octroi halts lead to under-utilization of vehicles

* Lecturer, Raj Rishi College, Alwar.

to the extent of 35 per cent of the truck-hours. Considering the total time wasted at the various checkposts, carrying capacity equivalent to 80,000 trucks or capital investment amounting to Rs. 650 crore is held-up at the checkpoints. In addition to that a large sum represented by the cost of goods carried by the trucks is also tied up. In case the octroi is abolished, the national economy can have at least 25 per cent more traffic output.

Octroi not only restricts the trade by impeding smooth and speedier flow of goods but also retards, as a whole, the economic growth of our country. By nature, it is regressive in its incidence. It falls heavily on the necessities such as foodgrains, vegetables etc. and thereby distorts the terms of trade against agriculture. Maharashtra's Wankhede study group has also emphasised these facts.

Here, it will be pertinent to quote from a study of K. Meenakshisundram —

Alternative Sources of Revenue

Here, a genuine fear may be haunting the minds of many—the fear of loss of revenue to local bodies/ state governments if the octroi is abolished. But one may point out that many states like Tamil Nadu, Andhra Pradesh, Kerala etc. are managing their affairs well without any octroi. The Government of Madhya Pradesh also, abolished octroi on 30th April. And for the resultant loss of Rs. 18 crores the local bodies were provided with alternative sources of revenue. Property tax was handed over to these bodies. The turnover tax was enhanced from .4 per cent to 1.25 per cent and A new levy called entry tax @ 1.25 per cent ad valorem was introduced. This is to be collected by the sales tax department on behalf of the local bodies. Other state governments should also have followed the suit in their interest as well as in interest of the national economy.

To gain one rupee from octroi, the national economy is suffering a loss of three rupees.

The Final Tally of Octroi

Gains	(In crores of Rs.)	Losses	(In crores of Rs)
1. Octroi Revenue	250.00	1. Value of traffic un-utilised on account of octroi detentions.	324 00
Less Cost of Collection — 5 per cent	12.50	2. Tax revenue that would have accrued @ 30% of (1) above	97 20
3. Net Octroi Revenue i e (1)—(2) above	237.50	3 Leakage of revenue shown here as 40% of the estimated Rs. 725 crore, the mid-point between Rs. 500 and 900 crores.	290 00
			711 20

The Final Tally of Octroi

Thus, the proportion of Octroi gains to production, tax and other losses is approximately 1 : 3. To gain one rupee from octroi, the national economy is suffering a loss of three rupees. Hence, a policy change from this high cost-benefit ratio merits unqualified support.

Alternatives suggested by the various committees such as Keskar Committee include (a) Surcharge on sales tax or additonal sales tax (b) Municipal sales-tax or Municipal surchage on sales tax (c) Municipal turnover tax (d) other complimentary levies for equitable distribution of the tax burden.

A combination of one or more will do well to get rid of this absolete levy-octori. □

Steady Decline in T.B. Deaths

As a result of various measures taken under the National Tuberculosis Control Programme, there has been a steady decline in the number of patients dying of T.B. in the country. Though the precise information in this regard is not available but on the basis of limited studies conducted, it is estimated that nearly 80 to 100 persons per one lakh population die due to tuberculosis every year, in the country. This is far less than 200 deaths per one lakh population estimated in 1951. TB is a major public health problem in India prevalent in the rural as well as urban areas and it is estimated that there are about 9 million persons suffering from radiologically active TB disease of the lungs. Of these nearly 2.2 to 2.5 million are sputum positive or infectious.

Under the National TB Programme for providing diagnostic, curative and preventive measures to check the spread of the disease, two main methods, namely treatment of active cases of T.B. with modern effective anti-TB drugs and immunisation by B.C.G. vaccination of the susceptible population, especially infants. have been employed.

Priority is being given to establishment of T.B Centres for organising Community Control of T.B. in each district of the country. So far a total of 319 well-equipped and staffed district Centres have been set up under the programme.

Proposals have been made for the expansion of the diagnostic and treatment facilities during the new Sixth Five Year Plan period (1980-85). The Multi-purpose Health Workers and Community Health Workers have also been involved in the implementation of the T B Programme, specially for the benefit of the rural population. □

Iran's Economic Development

Dr. Mohammad Iqbal*

THE Iranian people, through a referendum in April 1979, established the Islamic Republic of Iran, which means the country is to be governed by the principles of Islam. This was decided by a majority of more than 90 per cent of the people. Unlike the former Pahlavi regime which believed in Westernisation, the people are now aiming at a polity based on Islam. Whether the revolution which overthrew Reza Shah was a political revolution or a religious one is a matter of controversy.

Iran, a potentially rich and historically less developed country, has been recently facing instability coupled with a weakened economy, marked by a reduction in oil production. Earlier the country was expected to achieve an average of 8.5 per cent growth rate since 1965. Prior to 1979 Iran was maintaining high levels of oil exports. The increasing oil exports coupled with steep increase in oil prices, brought substantial revenues. Oil remained the largest contributor to national income. Whatever strides made in the economy were largely the result of the expanding oil revenues.

In earlier times Iran had to heavily depend on foreign countries for her requirements. But in recent years a shift in imports was plainly discernible. The ratio of imports of capital and intermediate goods, such as machinery, electrical items, chemicals, iron and steel and road vehicle parts, has gone up in most of the cases. The ratio of consumer goods and luxuries in total imports was decreasing.

During the post-second World War period, Iran adopted a series of economic plans. The task of planning was assigned to a semi-autonomous Plan Organisation established in 1948.

Iran's Fifth development Plan (1973-77), originally envisaged an expenditure of US $ 36,000 million, of which $ 23,000 million, was allocated to the private sector, in 1974 the total budget estimate was 3,105,000 Riyals of which 27 per cent was allocated to defence.

Allocations to various Economic Sectors (Percentage)

	Plan III (1963-67)	Plan IV (1968-72)	Plan V (1973-77)
Petroleum . .	17.3	19.5	48.5
Industries & Mines	20.4	22.3	16.1
Services . .	38.3	40 0	27.0
Agriculture . .	24.0	18.2	8.4

* Centre of West Asian Studies, A.M.U. Aligarh.

As a result of the Shah's policy, farmers were not given enough assistance from the government to cultivate their land. Hence the country became heavily dependent on food imports from other countries. The Shah had distributed the land belonging to religious institutions among the farmers in order to undermine the economic independence of the Ulema. The share of agriculture which was 24 per cent in the third Plan was reduced to 18.2 and 8.4 per cent in IV and V Plans respectively. Besides agriculture, the share of industry also fell from 20.4 per cent in the III Plan to 16.1 per cent in V Plan.

During the reign of Shah, Iran was considered to be the policeman to guarantee the security of the Gulf. Iran in 1974 was the biggest purchaser of military equipment from the US. It purchased 3794 million dollars worth of weapons from the US. But Iran's huge arsenal of US-made military equipment has become ineffective for lack of spare parts. The Iranians have approached West Germany and Italy in futile search for the needed hardware. The US stopped supplying the spare parts a few days after the November 4, 1979 seizure of the US embassy in Tehran. Two of Iran's three American-made destroyers are out of commission and the third would be unable to stay at sea for long. All of the navy's helicopters and hovercrafts are out of service. Only a few of Iran's F-14 jet fighters are still capable of flying and they can operate only in clear weather because their radar navigation systems are broken. The Iranians placed an emergency order in October last year for spare parts for their F-43 but failed to pick them up before the embargo took effect. The US has also stopped the supply of vital spare parts for Iran's oil industry as a reprisal for not releasing the American hostages.

The economy of Iran rests upon the oil revenue. They also lack experience in formulating an effective economic Plan. Therefore they need to build up an independent economy for which the level of economic productivity is required to be raised.

Difficulties

Dr. Abol Hassan Bani Sadar, a liberal democrat with strong commitment to Islamic ideology assumed the office of President on 4 Feb., 1980. It marked a new phase in the Iranian revolution. Today the country finds itself in a difficult economic condition aggravated by the latest conflict with Iraq. The economy has been stagnant. Unemployment is mounting between 45 and 60 per cent. Oil income has fallen considerably due to shortfall in production. The oil revenues for the year which started on 21 March, 1980, have fallen by about $ 10,000 million in the past six months. Hence they have to cut expenditure allround and increase non-oil revenues. Ezzatullah Sahabi, the head of the

Plan and Budget Organization has said, "the budget deficit will be so great that it would not be in the interest of the country. The principles of the budget must be changed to become more logical. If conditions permit, we can either get loans from abroad for development Plans or increase oil production."

Iran's whole economy rests upon the oil revenue. Moreover, the lack of experience in formulating an effective economic Plan is another handicap. They have to build up an independent economy as well as an independent social, political and educational structure. The tremendous task before the government is to raise the level of economic productivity. It cannot be done without the cooperation and hard work of all citizens, as well as tightening up consumption.

Iran's 1980-81 Budget

(Billion Riyals)

Expenditure	Current	Development	Total
Public Affairs	225.3	49.6	274.9
National Defence	377.2	0	377 2
Social Affairs	180.8	210.1	390.9
Economic Affairs	296.2	671.6	967.8
Other (chiefly National Expenditure Organs)	741.4	85.7	827.1
Revenue :			
Oil and gas			1,813.7
Taxation			418 0
Other Domestic revenues			142.0
TOTAL			2373.7

Abol Hassan Bani Sadar, soon after his presidential election victory, declared that the reconstruction of the economy was his priority task. Measures were to be taken to fight inflation and boost industrial and agricultural production. The expansion in economic activity was supposed to be financed by oil revenues. They want to concentrate on boosting employment, developing rural areas and small towns and taking industry to its full output capacity within a short period. In order to deal with inflation the government will attempt to decrease imports and prevent importers from earning excess profits. Traders have been asked not to make excess profits or hoard food supplies. Measures would be taken to persuade people not to buy goods which they do not need. To reduce the dependence on foreign goods, the import of toys, cosmetics, horses, billiard tables and other luxury items has been banned. The Agronomic Company of Iran has signed an agreement with Czechoslovakia to help build the Karum sugar refinery in the south. The Czechs are to supply equipment to process 20,000 tons of sugarcane a day. The work on the construction of the $ 130 millian copper refinery at the Sar Chashmeh Copper Complex in the South was to be resumed ; it had been stopped in Feb., 1979 revolution. Krupp and its partner Mechim of Belgium were to send workers to Iran for this purpose. The first place of the Bandar Khomeini petrochemicals complex was expected to start production in 1981.

Since Iran has been facing many difficulties in the past two years, compounded by the recent conflict with Iraq, it will take a long time for the country to attain substantial economic growth. The conflict has seriously damaged Iraq's economy also. □

Public Sector in India

(*Contd. from page 6*)

thrust for better performance. Side by side, pricing policies in the public sector would need to be reviewed to make them more realistic, and not as an instrument of subsidising the other sectors of the economy.

Managerial Revolution

A major managerial revolution has taken place in the public enterprises, although rather quietly. It is not often realised that the managerial group in the public enterprises under the Central Government is today more than one lakh. This is roughly three times the size of the managerial group in the All India and Central Services. There is no doubt that India's public enterprises have thrown up some of the managers of the highest quality in the country. The confidence of the nation in the public sector would be strengthened if the public enterprises can keep up the progress made in the last three decades and improve upon it considerably in the coming years.

No effort should be spared in focusing attention on training and development. One of the proposals which deserves serious consideration is the establishment of a National Academy of Management for public sector managers. It would appear imperative that such an institution is set up so that whole task of breeding a new generation of bright new managers of India's public enterprises could be taken up on a systematic footing. In the coming decades it is the managerial culture of the public enterprises which will be the pace-setter in restructuring India's bureaucracy, and its economy.

In the last ten or fifteen years, new ideas have been emerging within the public sector regarding the managerial role, and its responsibility. At the same time, there has been a perceptiable change in the introduction of new culture of managerial innnovation.

Instruments of policy are to be introduced which on the one hand while making public sector answerable for its performance, leaves it at the same time considerable freedom to set its own rules of operation, and details of its working are not questioned from time to time at different forums, whether they be in the Government or outside. By a set of instruments of instructions, the Government could lay down for a particular company the policy framework under which the company will have to operate and the yearly performance, profits, etc., which each company will have to show. Within these boundaries, the public sector needs to be allowed a free hand. In fact, such is the situation obtaining in regard to some of the oldest public enterprises in Germany, France, Italy, etc., where these enterprises are not only world famous but are making considerable contribution to provide many manufactures and services for which they were set up and also contribute significantly to the augmentation of the national economy. India is faced with a new challenge of expansion and growth in its economic development, so that poverty is removed in the near future. In this task, public sector has to play a great and constructive role. □

Economic Disparities and Industrial Licensing

S. P. Shrivastava*

THE system of industrial licensing came into operation in 1952. The Industries (Development and Regulation) Act provided that for the implementation of all industrial proposals, involving an investment in fixed assets of more than Rs. 10 lakhs and seeking either the establishment of a new unit or the production of a new commodity or substantial expansion of the existing productive capacity, a licence would have to be obtained first. The maximum limit for exemption from industrial licensing, which was placed at Rs. 10 lakhs initially, was raised to Rs. 25 lakhs in the year 1964, to Rs. 1 crore in the year 1970 and finally to Rs. 3 crores in the year 1978. Similarly, the number of industries to which the Act applied was 37 in the beginning. It had gone up to 240 by 1969. Presently, the number of industries covered by the Act stands at 164.

A perusal of the objectives of Industries (Development and Regulation) Act makes it clear that industrial licensing had been assigned an important role in alleviating the problem of economic disparities. Through prevention of concentration of economic power and encouragement to new entrepreneurs, it was expected to bring about a reduction in the inequalities of personal income and wealth. Through the distribution of industries on a more widespread basis leading to the balanced development of different regions, it was expected to provide a solution to the problem of regional economic disparities.

Nevertheless, the fact that the industrial licensing policy of the Government has been singularly unsuccessful in tackling the problem of economic disparities, has been very well brought out in the reports of the Monopolies Inquiry Commission (1965), the Committee on Industrial Planning and Licensing Policy Inquiry Committee (1969). Instead of alleviating, industrial licensing has only succeeded in aggravating the problem of economic inequalities.

Reasons

The root cause of the failure stems from the inherent weakness of the industrial licensing system. When used properly, the system can enable the state to prevent the expansion of a large business house in any industrial field or to prevent the establishment and expansion of an industrial unit in a particular congested and developed area. However, there is nothing in the system, which can attract the new and smaller entrepreneurs to enter the field of industrial investment or which can draw industrial units to certain backward and under-developed areas. As a matter of fact, industrial investment is a function of a large number of factors. If other factors are not conducive, easy availability of the industrial licence alone cannot prompt an entrepreneur to invest his money in an industrial venture or in a backward area.

The second reason is the manner in which the system of industrial licensing has been implemented. It has been wielded in such a manner that it has succeeded only in facilitating the growth and expansion of the large and established business houses. What has been checked is the entry of the new entrepreneurs and the expansion of comparatively smaller industrial units. The very procedure of obtaining an industrial licence has been quite complicated, cumbersome and costly. While this has discouraged the entry of new entrepreneurs and checked the expansion of smaller units, the growth and expansion of the large and established business houses has remained unaffected. Owing to their strength, vitality and experience, the large and established business houses have been able to overcome the procedural difficulties with comparatively greater ease. In this way by 'restricting' the new and smaller industrialists and by 'not restricting' the established and big business houses, the procedure for the grant of industrial licences has been responsible for encouraging instead of checking the concentration of economic power in India.

Through prevention of concentration of economic power and encouragement to new entrepreneurs, it was expected to bring about a reduction in the inequalities of personal income and wealth.

Another reason behind the inability of the system of industrial licensing to deliver the goods consists in the fact that it was implemented in a casual and non-serious manner. In the Dutt Committee report and elsewhere as well, the shocking revelation has been made that the objectives of industrial licensing, which were propogated so much among the general public, were never officially emphasised upon the licensing authorities. No policy guidelines or directives were ever issued ; no principles were ever laid down to provide a definite basis to the licensing authorities for granting or rejecting an industrial licence. Under the circumstances the process of decision-making remained characterised by a sort of ad-hocism and the licensing officials enjoyed considerable discretionary power. Given the conditions of rampant corruption in India's public life, the big business houses had little difficulty in getting the discretion of licensing officials exercised in their favour.

* Department of Economics, University of Allahabad.

Compared to their smaller rivals the large and established business houses were placed in an advantageous position in more than one way. Licences were issued on a 'first-come-first-served basis' and being better organised and better informed the bigger houses could put in for licences more readily. Not only that, they also abused the system of 'sequential licensing' for the purpose of 'pre-emption or foreclosing of industrial capacity'. In his report Prof. R. K. Hazari has pointed out the practice of submitting multiple applications for the same product by the concerns belonging to one industrial house. This enabled the larger business houses to pre-corner a considerable amount of the targeted capacity and thereby limit the chances of the entry of new and smaller entrepreneurs. Then, availability of foreign collaboration and finance was implicitly accepted by the licensing authorities as a basis for preferring an application; and compared to their smaller rivals the large business houses had better interantional contacts. Above all, owing to their stronger financial background and longer experience, the bigger houses were in a better position to implement the licences and suffered lesser risk of licence revocation.

As regards the location of industrial units, the licensing authorities had to work under the pressure of political pulls and regional claims. The economic factors, which should actually have been taken into account while approving any location for an industrial unit, were pushed into the background. Under the circumstances, it is little wonder, if the instrument of industrial licensing could not be utlised in an effectve manner to alleviate the problem of regional disparities. □

Spicy Andamans

G. Satyarao*

THE Tusonabad Spieces Cooperative Society perhaps the first of its kind in the country, was formed in the Andaman and Nicobar Islands with the specific objective of raising spices on a large scale. Several such societies are being formed there to bring about 10,000 hectares of unutilised hilly lands under spices cultivation in about five years with the massive assistance of the Agricultural Refinance and Development Corporation. A high level export team headed by Dr. G. V. Ramana Murthy, Joint Commissioner for Commercal crops, Government of India, recommended the large scale cultivation of spices like pepper, clover, nutmeg and others on the hilly tops, without denuding them of the standing forest trees. This was proceeded by a successful experiment conducted by Shri M. R. N. Rao at the Jirkatang Agricultural and Demonstration Farm in South Andaman. He raised shade loving spices plants utilising the canopy of the tall tropical forest trees.

Encouraged by the successful experiment and the recommendation of the expert team, the Government of India had launched a massive programme to utilise the hilly lands given to the farmers for spices cultivation and bring about a radical change in the agricultural practices without any deforestation.

As a result of this a centrally sponsored progeny farm and central nursery was established at Jirkatang on an area of 26 hectares to meet the heavy requirement of planting material. This farm includes 15 hectares under pepper, 5 hectares each under clove and nutmag and one hectare under cinnamon. The progeny farm has already grown and has been supplying seed materials to the farmers at subsidised rates. Another progency farm on a 50-hectare area is set up in Kachal island which is in the initial stages.

The Agricultural Department and the Cooperative Department jointly prepared a package programme which envisages plots of 200 acres as viable units, Each plot would require 160,000 pepper cuttings, 10,000 plants each of clove and nutmeg in addition to 40,000 seedlings of coffee and cocoa. These spices plants will start yielding income after five years. In order to provide some income till that time, the package includes planting of some banana and pineapple without disturbing the spices plantations. Since these spices are shade loving, there is no need to clear the forest trees. It is estimated that the spices plantation in full bloom, will yield an annual income of about Rs. 12,000.

To enthuse the small farmer with small holdings the Andaman and Nicobar administration had taken steps and brought them into cooperative fold. In the Tusonabad cooperative society, 60 farmers had pooled their land and resources in this venture. The land holdings are mortgaged with the State Bank of India and a huge loan assistance for spices cultivation is given to the Society.

The scheme envisages that the State Bank of India will provide all necessary finance to the cooperative society from land development and plantation stage till it reaches the fruiting stage. This includes land development charges, soil conservation, cost of the planting material, fertilisers, pesticides and other inputs. The farmer will continue to get the benefit of the various subsidies available under soil conservation, and agricultural schemes, so that the total loan burden on the farmer is kept to the minimum. It is estimated that the amount required to be invested over a five year period on the plantation will be about Rs. 5000 per acre. Under the package, the government departments of agriculture and cooperation will bear the overhead expenses for the management of the cooperative society. □

*News Reporter, All-India Radio, Hyderabad.

Haryana Financial Corporation: A Review

S. K. Mehrotra*

FROM the very beginning the Government of Haryana has been taking keen and active interest in the rapid and balanced industrial development of the State. The Haryana Financial Corporation was formed in 1967 to develop and provide necessary physical and financial infrastructure for the development of industrial activities in the State. This Corporation is entrusted with the task of coping with the financial needs of the medium and small scale industries. In recent years the Corporation has started contributing towards the development of backward and rural areas under the Rural Industries Scheme.

In the recent past the Haryana Financial Corporation has been contributing to the indusrial betterment of backward and rural areas.

The authorised capital of the Corporation is Rs. 5 crores and the paid up share capital, Rs. 3.46 crores Apart from getting finance from share capital, the Corporation has been issuing debentures and bonds, inviting public deposits and getting refinance facilities from the IDBI. The Corporation raised Rs. 13.75 crores from the issue of debentures and bonds, Rs. 5.7 crores from public deposits and refinance from the IDBI of Rs. 9.2 crores upto March 31, 1980.

The Head Office of the Corporation is situated at Chandigarh. The Corporation can sanction loan to a single unit to a maximum of Rs. 30 lakh, the minimum limit in practice being Rs. 10,000. Loan is restricted to a maximum period of 20 years. Total sanctions up to March 31, 1980 were Rs. 68.36 crores and the total disbursment upto the same period was to the order of Rs. 42.63 crores. Loans have been sanctioned to 27 industries mainly in the Small Scale Sector. The Prominent borrowing industries *inter alia* include food manufacturing, iron and steels, chemicals, transport and textile. In the recent past the Corporation has also been contributing to the industrial betterment of backward and rural areas. During the year 1979-80 out of the total disbursement of Rs. 3.85 crores, a sum of Rs. 2 crores was given to backward areas and Rs. 7.89 lakhs to 56 units under Rural Industrialisation Programme. The Corporation sanctioned foreign currency loans of Rs. 8.10 lakhs under the World Bank Loan Scheme. The Corporation also acts as an agent of the State Government for disbursement of Central Subsidy and Seed money. During the year 1979-80 Rs. 10.96 lakhs were disbursed by the Corporation as Central Government subsidy and Rs. 4.40 lakhs under seed money scheme of the State Government.

Problems

The Corporation is faced with a number of problems which may be summarised as follows :—

The most important problem is of recovery. The outstanding loans at the end of March 31, 1980 were Rs. 31.55 crores. The delay in the sanction of loans, incorrect assessment of the credit-worthiness of the borrowers and misappropriation of the money borrowed are some of the root causes for overdues. For getting rid of the problem of overdues it is essential that the Corporation authorities should exercise greater care. Filing of suit against the defaulting units is not the only remedy because it is a costly and time consuming process. It is heartening to note that the Government of Haryana enacted the Haryana Public Money (Recovery Of Dues), Act 1979, which empowers the Government to recover the dues of the Corporation as arrears of land revenue.

Secondly, the resources of the Corporation are grossly inadequate looking at the wide-spread scope of industrial development in the State. The Reserve Bank of India, Industrial Development Bank of India and World Bank should place more resources at the disposal of the Corporation. The State Government should utilise its good offices for enhancing the resources of the Corporation.

Thirdly, it is alarming to note that about 40 per cent of the loans sanctioned by the Corporation have not been disbursed mainly because of extraordinary delay in the sanction of the loans. The reason for the delay was the lengthy procedure followed by the Corporation in the grant of loans. To bridge the gap between the sanctioned and actually disbursed loans, it is necessary that the procedure of granting loans should be simplified and a time-limit of not more than 60 days from the date of application fixed for the disposal of applications for the grant of loans.

To bridge the gap between the sanctioned and actually disbursed loans the Haryana Financial Corporation should simplify the procedure of granting loans.

Fourthly, on account of lack of coordination between the Corporation and other financial agencies, sometimes the borrowing units obtain loans from more than one financial institution which is against the rules

(*Contd. on page 23*)

* Lecturer in Commerce, Sh. L.N. Hindu College, Rohtak.

Development of Uttar Pradesh

P. K. Bhargava*

THE economy of Uttar Pradesh is beset with a number of difficulties due to the flood situation. Its development has also been very slow in the past. In fact, the relative economic position of the State has worsened during the last 30 years of planned economic development of the country. While in 1950-51 (the last year of the pre-Plan period) the per capita income of the State was 5 per cent above the all-India average, at present it is about 30 per cent below the average. It is, therefore, necessary that the State must develop at a rate at which the national economy is likely to grow so that the existing gap does not widen. Rapid development of the State necessitates mobilisation of additional resources from all possible sources.

The Government of Uttar Pradesh has not mobilised adequately its own resources in the past. It is evident from the fact that in the 1977-78 Budget, the revenue from State taxes in Uttar Pradesh formed 5.78 per cent of the State's income, while the States of Karnataka (11.31 per cent), Kerala (9.62 per cent), Madhya Pradesh (7.50 per cent) and Rajasthan (6.35 per cent) raised relatively higher percentages of their income through State taxes although the per capita income of these States is lower than that of U.P. Similarly, the per capita revenue from State taxes in Uttar Pradesh in the 1977-78 budget was Rs. 44.41 as against an average of Rs. 71.60 for all the States during the year. Even relatively backward States of Karnataka (Rs. 89.26), Madhya Pradesh (Rs. 57.23) and Rajasthan (Rs. 54.87) had higher per capita revenue from State taxes than Uttar Pradesh during that year. These data clearly indicate that there exists scope for raising additional resources by the State Government.

Uttar Pradesh has a predominantly agricultural economy. The contribution of agriculture to the State income is about 58 per cent as against 42 percent for the country as a whole. The only taxes that are levied on the agriculturists in the State are land revenue, agricultural income tax (replaced by large holdings tax) and cess and purchase tax on sugarcane. Their share in the revenue from State taxes was 43 per cent in 1951-52 which has progressively declined to as low as 8.4 per cent in 1977-78. It is, therefore, necessary to take suitable steps to raise additional resources from the agricultural sector. However, in view of the [illegible] situation due to the recent floods it may not be possible to do so at present; the State Government has rightly suspended recovery of land revenue and other dues from the agriculturists and provided them short term cooperative loan of Rs. 250 crore as also fertilizer subsidy to the extent of 33-1|3 per cent to marginal and 25 per cent to small farmers.

The per capita yield of sales tax in Uttar Pradesh in 1977-78 budget was Rs. 23.18 as compared to the corresponding figure of Rs. 40.66 for all the States in that year. It is necessary to tighten up the administration to check evasion of the tax and realise arrears of revenue. One of the important ways of checking sales tax evasion is that the goods consigned to a businessman in any part of the State should be delivered only when the necessary documents are endorsed by the sales tax officer of the area. If this is done then it will be necessary for a dealer to record the sale of the goods. There should also be frequent surprise checks of stock registers of the dealers by the sales tax inspectors and officers. There is also a case for rationalisation of sales taxation and its more effective assessment and realisation than at present. For this purpose, it will be necessary to rationalise the rate of tax on a number of commodities and to bring within the tax net other commodities which are now left free. This will necessitate a study of elasticity of demand and consumption pattern of different income groups to make the tax more equitable. It will also be necessary to have proper coordination with neighbouring States so that the tax may not be avoided by diverting purchases to adjoining States where the tax rates may be relatively lower. Through these measures the State Government should aim at raising an additional revenue of about Rs. 25 crore per annum, so that the per capita yield of tax may rise to Rs. 30.

Uttar Pradesh must develop at a fast rate to see that the gap between the per capita income in the State and the All India average is not further widened.

During recent times, there has been an increasing demand by traders and businessmen for abolition of sales tax. More recently, the Chief Minister of the State announced that in accordance with the recommendations of the Sales Tax Committee set up by the State Government, it would take steps aimed at abolishing the levy. He also pointed out that if the States of Bihar, Madhya Pradesh, Haryana and West Bengal decide to do away with the sales tax, U.P. would follow the suit. It is not only desirable but essential that the State Governments should not take any step in this direction because it will be difficult for them to retrace their steps. Moreover, sales tax accounts for about 56 per cent of States' own tax revenue and it has been the only ray of hope for them. In fact, what is needed is that the State Governments should collectively rationalise their sales tax system and take adequate steps to check evasion of the tax.

* Reader in Economics, Banaras Hindu University, Varanasi.

Under the existing arrangement of the Central Sales Tax Act, the tax is assessed and collected by the exporting States. Thus the incidence of the tax is borne by consumers in the importing or consuming States. However, the residents of the importing State do not benefit from the expenditure incurred out of the revenues so derived by the exporting State and they do not have any voice in deciding how this revenue is to be spent. This creates inter-State jealousies and fiscal inequity. Most of the exporting States, except Bihar, have relatively higher per capita income and are better off while the importing States are relatively poor and backward. Thus the relatively rich States are allowed to tax the residents of relatively poor States. From the point of view of equity, this is undesirable. The major beneficiaries are the main producing States

In Uttar Pradesh the contribution of agriculture to the States's income is about 58 per cent as against 42 per cent for the country as a whole.

and about 35 per cent of the total revenue from Central Sales Tax is derived by the four States of Maharashtra, West Bengal, Tamil Nadu and Gujarat. It would be in the fitness of things, if the existing provisions for the assessment and collection of the tax are revised so as to pass on this right to the importing States. This will increase the revenue of relatively backward States like Uttar Pradesh and at the same time also ensure that the revenue accrues to the importing/consuming States where the incidence of Central Sales Tax falls.

The return on various irrigation projects and electricity schemes has been inadequate keeping in view the large amount of capital invested by the State Government. In fact, the State Government has been incurring substantial losses on irrrigation projects and the losses on minor irrigation alone in State in 1978-79 are estimated at about Rs. 27 crore. If the losses from the minor irrigation can be reduced progressively, a substantial amount of resources could be released for development purposes.

As for the return on electricity schemes, the scope of raising power rates is limited, as it will adversely affect the industrial and agricultural development of the State. It is, however, necessary that the State Electricity Board concentrates on increasing the efficiency of electricity schemes so that the cost of production may come down. The Planning Commission has suggested that the working expenses in U.P. at the current rate of 10 paise per Kwh. are extremely high as compared to the corresponding figure of 7 to 7.5 paise per unit for all the States. It is estimated that reduction of one paisa per Kwh. in working expenses will ensure an additional sum of about Rs. 10 crore per annum to the State exchequer.

The Government of Uttar Pradesh had imposed a tax on the owners of land and buildings in urban areas with effect from July 1, 1962 but the tax was abolished from April 1, 1967 because of the difficulties involved in administering the tax. Since the local bodies were responsible for assessment, the annual value of land and buildings was often under-assessed because the officers of local bodies were subject to local pressures. In view of the urgency of additional resources, the State Government should think of reintroducing the tax and removing the earlier difficulties regarding assessment. The State Government should provincialize the services of assessment officers so that the annual value of taxable land and buildings may be fixed on a scientific basis.

The State Government can also think of introducing a tax on trades, professions, callings and employment. No doubt, it is a bad tax as it involves a kind of double taxation. However, the constitution has reduced the limit of double taxation by fixing a limit of Rs. 250 per annum per assessee. In case the State Government decides to introduce the tax, there should also be a provision for deducting the amount collected by the local bodies which they levy on the same tax base as is to be used by the State Government so that the residents of those districts, where the local bodies are also tapping this source of revenue, are not doubly taxed.

The per capita central assistance to Uttar Pradesh during 1951-79 was only Rs. 251 as against the all-India averrage of Rs. 279. Similarly, the per capita plan outlay in the State during the period was Rs. 636 as against the national average of Rs. 734. It is hoped that the Union Government will be sympathetic in providing assistance to this relatively backward State in future so that it may, at least, come up to the level of national development. □

Haryana Financial Corporation

(*Contd. from page* 21)

is framed by the Reserve Bank of India. To overcome this difficulty, it is suggested that an independent Government agency on the pattern of European Countries, be appointed which will provide information to the financial institutions regarding the loans already taken by the borrowing units.

Fifthly, the task of re-organisation of the Corporation is still incomplete. Three regional offices of the Corporation should be opened in Faridabad. Rohtak and Ambala. Similarly, branch offices at industrial towns of Bahadurgarh and Jagadhari are also needed.

Finally, the Corporation is also faced with the shortage of technically qualified staff which can assess the credit-worthiness and evaluate the suitability of the proposed project. For solving this problem it is suggested that the Branch Managers at the District Head Quarters should be technically qualified persons. As regards the evaluation of the assets one committee of two members should be formed at each of the Regional offices to scrutinise the proposals for loans exceeding Rs. 5 lakhs.

Although the Haryana Financial Corporation has made rapid strides in the field of providing finance to the industrial units in the State, much remains to be done. We certainly feel that for promoting new entrepreneurship the Corporation should take a lead in the matter of making available financial help to the technically trained unemployed. Last but not the least important is that the Corporation should provide liberal financial assistance to the development of backward areas and rural industries. □

Marginal farmers with their hybrid sorghum CSH-1 crop

owar Production in Andhra Pradesh

U. B. Raghavendra Rao*

ANDHRA PRADESH provides a veritable testing round for the adventurous few who would like to :apple with the problem of stabilising and improving roductivity of dry crops. A wonderful opportunity 'as thrown up in 1979-80. This was an year of wide- read and severe drought effecting almost all the dis- icts of the State. Substantial areas were not sown for 'ant of adequate soil moisture. Crops in sown areas so withered. In July 1979, the Department of Agri- ilture of the State, in close collaboration with the :ientists of the APAU, the AICRIP and the All India ryland Coordinated Project brought out useful ex- nsion literaure suggesting alternative crops that could : raised in August and September in unsown areas. was decided to launch a special compensatory crop rogramme to bring additional areas under selected y crops at the time of the September rains. The ate Government issued orders localising lands in the mmands of minor irrigation sources only for irrigated y crops so that whatever little stored water was 'ailable in the tanks as a result of September rains as made use of by the majority of the ayacutdars and is not frittered away by a lucky few for raising costly wet crops like paddy. In respect of dry land areas the most potential areas were chosen in the affected dis- tricts. High Yielding hybrids of Jowar were procured from Karnataka and Maharashtra. Groundnut seed of 1788 M.Ts was moved by rail from Amreli in Gujarat to various destinations in Andhra Pradesh. Yet an- other quantity of 2170 MTs was procured from various centres within the State by the APSSDC. The Government of India also extended liberal assistance for implementing the Contingency Plan for protecting the crops against any outbreak of pests and diseases. It would appear that given the will and effort of man, nature would stand by him. There were good rains in September. The Contingency Plan was switched on. Large scale sowing of dry crops both under tanks, major irrigation sources and other potential dry land areas in the affected districts was taken up in Septem- ber/October. There was careful monitoring of crops for any pest infestation. The result of all this was an all time high record production of jowar, Bajra, Maize, etc.

The following package of incentives was given to the farmers :

(a) Distribution of certified hybrid jowar seed of CSH 1, CSH 5, CSH 6 to small and margi- nal farmers on Seed Exchange basis and on

*Director of Agriculture, Andhra Pradesh.

50 per cent subsidy to other affected farmers.

(b) Distribution of liberalised credit at low rates of interest for the purchase of such inputs as seed, fertilisers and pesticides;

(c) Making available the required inputs in kind by the Department through its depots at the place of consumption itself;

(d) 50 per cent subsidy on plant protection chemicals for the control of pests;

(e) Farmers were also assured of marketing arrangements under which the Food Corporation of India would open purchase centres at suitable locations and procure the produce at the minimum support price.

A quanttiy of 350 tonnes of jowar seed was procured and supplied through the Department while a quantity of 230 tonnes was arranged through private distribution agencies. A sum of Rs. 5.76 lakhs was made available to farmers by way of subsidy on plant protection chemicals. For the first time Food Corporation of India procured a record quantity of 12,764 tonnes of Jowar from the rabi produce.

The higher production was not solely due to the increased area but there was an increase in the yield per hectare in rabi of 1979-80.

It may thus be seen that through advance planning in terms of drawing up of a Contingency Agricultural Production plan, an appropriate public policy measures, namely, localising tank-fed areas only for I.D. crops during the rabi of 1979-80 supplying inputs with reasonable subsidies, an assured market for the produce through the Food Corporation of India, it has been possible not only to stabilise jowar production at a time of adverse conditions but even to increase both production and productivity.

While during kharif of 1979 there was a decline in area by as much as 90,000 hectares this was more than fully compensated by increase of about 98,000 hectares during rabi of 1979-80. The districts which contributed significantly to this increase are given below:

District	Area in hectares		
	Rabi 1978-79	Rabi 1979-80	Increase
West Godavari .	2800	11,500	8,700
Krishna . .	50,100	1,04,700	54,600
Nalgonda .	72,100	96,000	23,900
Warangal .	1,03,100	1,19,700	16,600
Khammam . .	1,73,000	1,99,100	26,100
Kurnool .	2 18,500	2,25,800	7,300

The substantial increase in area in rabi of 1979-80 was made possible only because of the Contingency Agricultural production programme implemented as part of a comprehensive drought relief package by the State Government. ☐

A New Deal to the Jhumias of N. E. India

Dr. T. N. Saikia*

JHUMMING IS the primitive slash and burn system of cultivation and the primary means of livelihood for the hill people in the whole of N.E. India. The predominance of shifting cultivation remains as one of the major obstacles in the way of agricultural development in the region. The system of cultivation is such that the fertile hill slopes are cleared up by cutting and burning the natural vegetations and all the varieties of crops are grown under mixed cropping method according to the needs of the family. After using the same plot for two to three years the land is kept fallow in barren condition, exposed to heavy showers to erode the top soil down to the valleys. As a result the river sources are clogged and the river-beds raised causing floods in the valleys on the one hand and valuable forest resources are destroyed, water-sheds and ecological balance disturbed on the other.

The predominance of shifting cultivation remains as one of the major obstacles in the way of agricultural development in the North-Eastern region.

The hills of this region are generally inhabited by tribals. Their main occupation is cultivation with other allied subsidiary activities. Shifting cultivation for them is a 'way of life' with inherent viertues. It is also intimately linked with their socio-cultural life and beliefs. But still, there are a few tribal communities in the hills who have adopted partially or wholly settled cultivation. For instance the Apatanis in Subansiri district of Arunachal Pradesh are more advanced in the plateau than any other tribal community in this region. Similarly, the Angamis in Nagaland and the Khasis and Jaintias in Meghalaya have adopted settled cultivation particularly in terraced land. But a larger section of tribal population still practise jhumming over areas. The practice has posed a serious threat to the agricultural development programmes in the hills. A number of efforts have been made to reduce the social and economic disparity among the people living in the hills and the plains. But the efforts could not make much headway due to various reasons.

Assessment

The Central and the State Governments have taken up a variety of programmes since Third Five Year Plan to wean away the hill farmers from shifting cultivation. The programmes were designed to shift to the settled farming as an obvious remedy of shifting cultivation. The programme in these areas is urgent and both short-term and long-term impact-oriented programme to strengthen the hill tribals' economy is very much needed. In fact, both State and the Central Governments could do a little in reality during it successive Five Year Plans.

Recently, a study was conducted in the Garo Hills District of Meghalaya by the Agro-Economic Research Centre for N.E. India at Jorhat on a scheme taken up by the Soil Conservation Department of the Government of Meghalaya to wean away the jhumias from shifting cultivation in a phased manner. Under the programme the Department constructed terraces in potential areas and allotted two hectares per family in the initial stage with irrigation facilities besides free supply of seeds, fertilisers, etc. In addition, each family was granted Rs. 400 as incentives besides Rs. 2,000 for construction of their residential houses at selected sites planned by the Department. In spite of these facilities provided by the Government only 16 per cent of the families covered by the programme in the study area had left jhuming and opted for settled farming and the remaining 84 per cent families continued jhuming partly or wholly.

Another study conducted in Tripura in the recent past by the Agro-Economic Research Centre for N.E. India revealed that the colonisation scheme for settlement of shifting cultivators achieved a partial success. About 41 per cent of households settled in the colony left for unknown destination and the remaining 59 per cent of households were also dependent on jhuming mainly.

Manipur Project

Yet another study conducted in West Manipur District of Manipur by the same Centre in 1979 showed some contrast to the above mentioned two studies conducted in Meghalaya and Tripura during different years. The West Manipur district is hilly with its elevation varying from 800 m. to 2,000 m. above M S.L.

The shifting cultivation practice has posed a serious threat to the agricultural development programmes of the region.

and is inhabited by tribals. Shifting cultivation or jhuming is widely practised in Manipur except in the plain areas of Manipur Central District. The Integrated Hill Area Development Project began functioning from 1974-75 with financial support of the Government of India to help the people utilise the natural resources gainfully. The primary aim of the project is to remove the regional imbalances and disparities between the tribals living in the hills and the people

* Research Officor, Agro-Economic Research Centre for N. E., India, Jorhat.

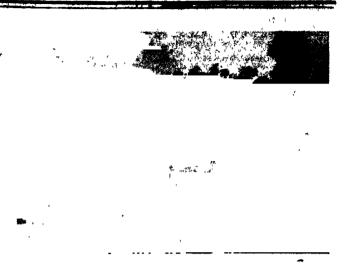
living in the plains in the country. The project was designed on the model of Indo-German Agricultural Project implemented at Mandi in Himachal Pradesh in, 1962, which has brought a perceptible change within a short span. The Indo-Gereman Project aimed at wiping out poverty and ushering in a new, prosperous and self-sustaining rural economy by diversifying the farming system. The Integrated Hill Area Development Project in West Manipur District has been designed with similar objectives.

One of the main aims of the Manipur project was to take up agricultural development programmes under which terracing, land development including minor irrigation were given priority. The idea was to demonstate to the hill farmers the increasing crop intensity in terrace cultivation, to motivate and encuorage them to take to settled cultivation. The programme was designed to introduce bench type terrace with irrigation facilities including soil conservation measures, and secondly by introducing high yielding varieties of crops and use of fertilisers etc., for better yield. In the initial stages cash and kind subsidy was arranged to the extent of about Rs. 1,800 per hectare for construction of terraces. Priority for construction of terraces was given to areas where perennial water sources for diverting hill streams rivulets exist. It was decided to provide one hectares of terraced land per family with irrigation facility. The project had the target of terracing of 1,000 hectares of such irrigated terraces during the period of 1974—79.

To examine the impact of the programme 37 terrace beneficiaries were contacted and interviewed and the overall achievement of the scheme was also assessed. The study revealed that the beneficiaries were provided with only 1.33 acres per family on an average instead of stipulated 1 hectare. Only about 31.16 per

The primary aim of the Integrated Hill Area Development Project is to remove the regional imbalances and disparities between the tribals living in the hills and the people living in the plains in the country.

cent of terraced area under the project was irrigated. The irrigation facilities provided in the terraces are also not satisfactory and do not provide water during the lean period because of lack of perennial water sources. Hence, the idea of introducing double-multiple cropping remains a theoretical proposition only. Crop intensity was worked out to be 115 per cent.

During the period 1974—78 only about 22.70 per cent of the targeted area for terracing fixed for the project period was achieved and remaining 77.30 per cent of targeted area was left to be covered only in one year. It may be due to lack of transport and communication facilities, lack of skilled labourer, shortage of project officials under the scheme and locational preference for hilltop dwelling of people. Ignorance about the new innovations and modern technology in agriculture and their slow rate of adaption posed a serious problem to achieve the project target. But it cannot be denied that a good beginning has been made towards this direction.

A rice field after Jhuming in a North-Eastern State

Due to inadequate supply of cultivable terrace from the project about 84 per cent beneficiaries had to continue with jhuming as their traditional way of livelihood to meet their food requirements. But from the demand side, it was observed that the hill farmers have come forward to accept the idea and assist the project for the fruitful implementation of its programme. The shifting cultivators were aware about the shortening of jhum cycle due to the growth of population and are prepared to opt for settled farming. A few of them

Control of shifting cultivation is a must for agricultural development in the hills.

had reported that they could not take up terracing programme on their own account, as terracing in the hills was a costly affair and their economic condition did not permit them to do so. The attitude of shifting cultivators in Tripura and Meghalaya as indicated in earlier two studies does not seem to be identical with the jhumias in Manipur. It may be opined that, if the Government planners and policy makers are at all serious to introduce settled farming in the hills, the attitude shown by the jhumias in Manipur West District should be honoured to achieve the main objective.

Control of shifting cultivation is a must for agricultural development in the hills. An integrated and planned approach through diversification of farming system is to be evolved to reduce economic imbalances and poverty to a considerable extent. It is also necessary to organise social and institutional set up and develop infrastructural facilities for socio-economic development of the hilly areas. The urge for development among the tribal communities should be created for developing a congenial atmosphere for all round growth. Intensive development of hill areas although requires huge resources, time and effort should be made to continue the process of development without any

A Case Study

Rural Development in Karnataka

Role of Grameena Bank

H. Basanna*

A MAJOR innovation in the history of Indian banking industry has been the setting up of Regional Rural Banks popularly known Grameena Banks. About five years ago, as a part of the 20-Point Economic Programme, Grameena Banks came on the Indian Banking scene to fill the void created in the rural credit structure following abolition of the traditional sources of credit and finance. Grameena Banks are financed by the Central Government, a sponsoring Bank and the State Government. The sponsoring Bank, one of the leading commercial banks, is entrusted with the task of spreading the network of branches of a Grameena Bank in certain districts where agricultural operations have assured sources of irrigation facilities.

In Karnataka, there are four rural Banks. One of them is Tungabhandra Grameena Bank. It covers Bellary and Raichur districts with its network of 64 branches. The Tungabhadra Grameena Bank has triple objectives of development of agriculture, promotion of employment and upliftment and rehabilitation of rural artisans who are engaged in arts and crafts allied to agriculture. The Bank lends directly to the needy customers on the basis of its norms. It also lends indirectly through Ryta Seva Sanghas (RSS) which are also known as Farmers, Service Cooperative Societies. This innovation has saved the small and marginal farmers from exploitation by the big and the influential members of cooperative credit societies.

Another innovation in rural development involving the use of Bank funds is the community irrigation wells which have sprinkler type of irrigation system There are four such schemes in Bellary district. Each such project has two or three bore-wells with a capacity to irrigate 50 to 100 acres. 50 per cent of the cost of such project is borne by the S.F.D A. and the remaining portion is financed by the Bank. The beneficiaries are responsible to repay only the amount lent by the Bank. Further, the Bank also provides credit for the purpose of cultivation.

Achievements of the Bank

A notable achievement of the Bank is its cheap operational costs. Each branch is located in a small building managed by only three members viz, one manager, one cashier and one clerk. Their salaries are on par with state government employees. There is no "window dressing" involving heavy expenditure. The Bank has earned Rs. 6.16 lakhs and Rs. 6.57 lakhs as net profit during 1978 and 1979 respectively.

Persons selected, recruited, trained and inducted into Rural Banking service generally belong to the area covered by the Bank and are generally familiar with the local socio-economic conditions as well as the requirements of the people.

The marginal, and the small farmers and the rural artisans who were neglected for several centuries in the past are now cared for. They are now regarded as part and parcel of the main stream of economic development in India

The creation of Ryta Seva Sanghas has given rise to new co-operative credit organisation with only people of more or less equal socio-economic status as its members and without any scope for exploitation by the vested interests.

By providing credit to people engaged in rural arts and crafts allied to agriculture, the Bank has counted every person who can take part in the process of production and serve the nation as well as serve himself.
By financing the development of community well-irrigation system, the Bank has helped in the establishment of mini-cooperative farming societies.

By meeting the credit requirements of people in rural sector, irrespective of their crafts or creed, the Bank has created a sense of security among the hitherto neglected sections of the rural community.

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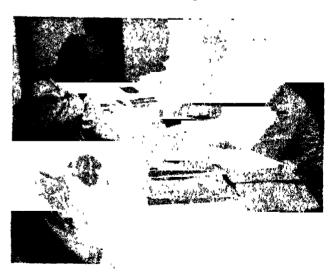
Farmers' needs being attended to in a Rural Bank

* Principal, G.B.R. College, Hadagali, Bellary District.

TRENDS

Adequate Support to SFC'S Share Capital

THE Twentieth Conference of the Chief Executives of State Financial Corporations was held in Jaipur recently under the auspices of Industrial Development Bank of India. It was felt that having regard to the resources constraint of Central financing institutions as also SFCs, it would be necessary for State Governments to provide adequate support by way of contribution to the share capital and allocation of bound quota out of the States' own quotas.

Shri R. K. Talwar, Chairman, IDBI, envisaged a greater role for the SFCs in the coming years and urged them to enlarge their area and scope of operations so that in the next five years SFCs should be able to finance projects costing upto Rs. 5 crores or so. In other words, they would be taking upon themselves greater responsibility in financing the development of small and medium sectors

Intergrated Development of 200 Small Towns

ABOUT two hundred towns are proposed to be covered during the Sixth Plan period (1980-85) under the new scheme for integrated development of small and medium towns. The scheme envisages to develop small and medium towns so that they act as growth and service centres for the rural hinterland and reduce the rate of migration to metropolitan cities.

According to 1971 census there are about 3,000 such towns in the country. These towns suffer from varying degrees of un-satisfactory conditions of water supply, sanitation, transport, communications, schools and medical facilities. There is a need for providing infrastructure to enable these towns to act as service centres for the surrounding rural areas.

Haryana to have More Anaj Mandis

FARMERS in Haryana will not have to travel more than 15 kilometers to sell their produce. A gigantic five year programme of establishing anaj mandis has been formulated.

This was disclosed by the Haryana Chief Minister, Shri Bhajan Lal recently while laying the foundation stone of a Rs. 63 lakh anaj mandi complex at village Mohana in Faridabad district.

A boat bridge is proposed to be constructed at village Mohana on river Yamuna to link Bhagpur village which would enable the farmers of about a dozen villages on the other side of Yamuna to bring their produce to Mohana Mandi.

Big Plan to Develop Water Resources

A national perspective plan for water resources development, involving Rs. 50,000 crores, has been drawn up, according to the Union Minister for Irrigation, Shri Kedar Pandey. It envisages development of additional storage facilities and the interlinking of rivers to generate the maximum hydro-power and extend irrigation facilities to more areas, he said.

Talking to a group of engineers at the Bhakra-Nangal project recently Shri Pande described it as one of the greatest water development plans in the world He said the proposed storages and the interlinks would ensure additional utilization of 170 million acre feet (MAF) of water, irrigation of additional areas of over 35 million hectares, generation of 40 million kw of hydropower besides flood control and other multipurpose benefits.

Observing that the perspective plan could be implemented by Indian experts without any foreign assistance, he said its two main components were Himalayan rivers development and peninsular rivers development.

Development of Small And Medium Towns

THE centrally sponsored scheme for the integrated development of small and medium towns has made a very good start. The Ministry of Works and Housing has already released funds for 32 schemes submitted by various States and Union Territories. The remaining 34 projects submitted by them upto March 1980 are being revised in the light of suggestions made by the Central Town and Country Planning Commission.

The Ministry has requested the State Governments to select towns for assistance and forward well prepared projects early in the financial year to enable the centre to release, after due scrutiny, the assistance admissible under the scheme. On an average the central assistance per project will be Rs. 80 to 100 lakhs.

Rural-Urban Income Gap Widens

THE rural and urban Indians are drifting away from each other and the dispartities of income opportunities and facilities between them are not only very wide but also further widening, according to a study by the National Council for Applied Economic Research.

The study entitled "Household income and their dispositions" reveals that less than one in twenty rural households had an income of Rs. 10,000 and above whereas urban households had an annual income exceeding Rs. 10,000.

About 95.8 per cent of the households in the low income groups of up to Rs. 1,200 per annum, who can rightly be termed as destitute, were in the rural sector. The remaining 4.2 per cent of the destitutes were in the cities—mostly the overflow from the villages to the cities.

If the agriculturists in India are considered as one nation, they would still constitute the second largest nation in the world, with a per capita income which would be the lowest among the 125 nations of the world for which per capita incomes are recorded in the World Bank Atlas, the report says.

The average income of an urban household was Rs. 7,074 or 1.8 times that of an average rural household of only Rs. 3,390. The proportion of rich in the urban society is 7.5 times that in the rural society.

The NCAER report also says that the disparity in incomes and wealth is also reflected in the social amenities available in the rural and urban sectors. For instance, in 1971, the rural literacy rate was 23 per cent against 52 per cent for the urban area. In respect of availability of the services of allopathic doctors the urban people are eight to nine times better off than the rural masses.

Help to Small Farmers in Tribal Areas

THE Union Ministry of Agriculture has decided to intensify several multi-purpose schemes for the all-round development of small farmers belonging to Scheduled Castes and Tribes living in different parts of the country. Under these schemes, the Centre will help the State Governments to initiate projects in selected areas to demonstrate to these small farmers, in their own fields, the benefits of modern agricultural practices and allied trades. The schemes relate to the control of shifting cultivation, conservation, poultry, duck and sheep breeding, dairy development, fisheries, lac cultivation and social forestry.

The Ministry of Agriculture has provided Rs. 1.11 crore in the current budget for the scheme to control shifting cultivation. The amount would be primarily used to continue twelve on-going projects started during the Fifth Five Year Plan for this purposes and the creation of five new projects.

An amount of Rs. 26 lakhs has been proposed for completion of work in on-going projects and creation of two new ones in the Union territory of Mizoram for 1980-81. Three new projects are being started with a total outlay of Rs. 17 lakhs in Arunachal Pradesh during the current year.

Better Deal for Workers in Sixth Plan

THE Sixth Five Year Plan, now being formulated by the Planning Commission, will lay stress on expansion and quality improvement of skill training facilities, development of rural workers' organisations, special employment programmes, vocational rehabilitation of the physically handicapped, improvement in the employment services, promotion of safety, workers' education, special problems relating to women-workers, child labour, and increased scope for workers' participation in management.

This was stated by Shri Narayan Datt Tiwari, Union Minister of Planning and Deputy Chairman of the Planning Commission, while addressing representatives of the Centre of Indian Trade Unions in New Delhi recently. The meeting was in a series convened by the Commission to seek views and reactions to the Plan-frame approved recently by the National Development Council.

The Minister said that under the 20-Point Programme a Commitment had been made for the economic and social rehabilitation of bonded labourers and necessary provision was proposed to be made in the Plan for the purpose.

STEP BY STEP

Rs 1,529 Crore S.T.C. Turnover

THE State Trading Corporation in 1979-80 reached a record turnover of Rs. 1,529 crores, an increase of 34 per cent over the preceding years's sales of Rs. 1,139 crores. While there has been a marginal increase in the export turnover from Rs. 602 crores in 1978-79 to Rs. 636 cores, imports increased substantially to Rs. 884 crores compared to Rs. 525 crores in 1978-79. The STC group comprises STC and five subsidiaries—Project and Equipment Corporation, Cashew Corporation, State Chemicals and Pharmaceuticals Corporation, Handicrafts and Handloom Export Corporation and Central Cottage Industries Corporation.

Record Profit by FACT

THE Fertilisers and Chemicals Travancore Ltd. (FACT) one of the oldest fertiliser companies in the country and a public sector undertaking of the Ministry of Petroleum, Chemicals and Fertilisers has made a profit of Rs. 65 lakhs, in 1979-80. This is the first time in the last 10 years that the working results of this Company have shown a profit. The profits earned for the year 1979-80 are also a record, being the highest ever by the FACT since its inception in 1943.

Besides fertilisers, the undertaking is also engaged in the manufacture of allied chemicalss. It has three operating plants in Kerala one at Udyogmandal and the other two at Cochin viz. Cochin Phase I and Cochin Phase II. Commercial production at Cochin Phase II commenced in April 1979 only.

Ethanol Production from Sugar Beet and Grain

Ethanol has considerable potential, both as a motor fuel and as raw material for the chemicals industry. Its production from domestic agricultural produce would permit relatively large volumes of oil to be saved, while the admixture of ethanol to petrol would enable the latter's octane rating to be raised, with a subsequent drop in lead levels.

A report submitted to the Ministry of Agriculture of Sweden says that Sweden should take immediate steps to increase output of ethanol and by the late 1980s could well be manufacturing a yearly total of 400,000 cubic metres derived from domestic sugar beet and grain.

BOOKS

Research in Geography

Survey of Research In Geography 1969-72. Published by the Indian Council of Social Science Research; Allied Publishers Ltd., New Delhi. 1979; pp. 234; Price Rs. 50/-.

GEOGRAPHY has already grown out of its narrow confines of mapping the physical surface of the globe. It has ventured into new dimensions and fresh pastures. Today a geographer is as much a specialist in various aspects of geography like agricultural geography, of human settlement etc. as any other scientist.

The book under review is the second of the series of studies in geographical research undertaken by the Indian Council of Social Science Research covering the period 1969-72. It covers many aspects: economic geography, social geography, historical and political geography and regional geography and planning.

The focus of the different contributors to this book is to give the reader an idea of the work done so far in different branches of geographical science and to bring home the vast dimensions of this all-absorbing subject.

The concluding chapter gives a summary of the work done so far and emphasises the need for further research of developmental geography. This is but natural since researches go on and on and for ever.

The book throws valuable light on many aspects of geographical research in India and is a useful addition to any modern library.

E. P. Radhakrishnan

Panchayati Raj in Assam

Panchayati Raj in Assam by S. P. Bain; published by the National Institute of Rural Development, Hyderabad; pages 119; Price Rs. 38.

THIS is a study on the working of local government institutions in Assam at the level of village panchayat, Anchalik Panchayat and at the sub-divisional level, namely, Mahkuma Parishad. The publication has been brought out by the National Institute of Rural Development, Hyderabad, and the study was funded by the Government of Assam. One significant feature of Panchayati Raj heirarchy in Assam is the absence of a district level body corresponding to the Zila Parishad in other States. The structure in Assam has the Gaon Panchayat at the village level, Anchalik Panchayat at the block level and Mahkuma Parishad at the sub-divisional level. The study has reviewed the general pattern of administration of panchayats in Assam. The detailed study is confined to the Gauhati Mahkuma Panchayat the Anchalik Panchayat and Gaon Panchayats selected from that area. The study brings out a large number of interesting features of rural organisation and economic activities in this area. However, given the heterogeneous nature of Assam's land tenure and cultural and linguistic features which vary from district to district, a study of this kind is bound to have only somewhat limited relevance. Panchayati Raj institutions do not operate in the hills. In fact, the hill districts have autonomous District Councils functioning under the provisions of the Sixth Schedule of the Constitution of India.

The study found that members of the Panchayats di[d] not show sufficient keenness in work related to develo[p]ment. Another serious drawback brought out by th[e] study is the lack of participation of the weaker sectio[n] of the rural society, namely, Scheduled Castes, Schedu[]led Tribes and women. It also reveals that the sta[ff] provided for the Mahkuma Parishad is inadequate t[o] meet the requirements of the Parishad. The functio[n]ing of a parallel sub-divisional developmental commi[t]tee headed by Sub-Divisional Officer appears to clas[h] with the functioning of the Mahkuma Parisha[d]. Finally, the Panchayati Raj institutions appear to b[e] rather weak. This study recommends a greater in[]tegration of administrative organisations of the Pan[]chayat and that of general administration. Transfer o[f] large financial resources to the Panchayats is als[o] necessary. The proportion of expenditure on admini[s]trative items appeared to be excessive. The stud[y] also recommends the creation of a separate cadre o[f] officials for Panchayati Raj administration. On th[e] whole, this study gives a good chit to the Assam sys[]tem of Panchayati Raj. The usefulness of the stud[y] has been somewhat reduced by the introduction of th[e] Assam Panchayati Raj Act, 1973. This study refe[rs] to the situation prevailing before that.

C. N. S. Na

Unconventional Approach to Biographies

Alternative Sciences by Ashis Nandy, Allied Publisher[s] New Delhi. pages 156, Rs. 40.

BIOGRAPHIES of scientists are nothing uncom[]mon, and much has been written about Jagadis[h] Chandra Bose and Srinivasa Ramanujan in the pas[t]. What is new with the volume under review is i[ts] rather unconventional approach to the life-histori[es] of the two great Indian scientists. The author, [a] well-known psychologist, looks at them from a pur[e]ly sociological and psychological angles and attemp[ts] to correlate their successes and failures with their lif[e] styles and family environments. The result is [a] fascinating, comparative study of the lives of two gre[at] men who were poles apart in their approach to scienc[e] as a medium of human self-expression (hence the titl[e] *Alternative Sciences*).

Bose (1858-1937) was born in a well-to-do Brah[]mo family and had an upper class upbringing. H[e] started his career as a brilliant physicist but lat[er] changed his discipline to become an even more in[]fluencial plant physiologist. Bose gave a speci[al] Indian perspective to world science and was one o[f] the first among modern scientists to enter interdis[]ciplinary research in his field. Yet, the author tell[s] us, he died "a lapsed scientist and half forgotte[n] mystic". One of the main reasons for this, he say[s] was the scientist's "failure as a man who could n[ot] accept that he had ceased to be a creative scientist" But nothing sealed Bose's scientific fate more full[y] the author claims, than his inability to keep open hi[s] channels of communication with his professional col[]leagues He never allowed anyone to contradict him he could not enjoy the company of junior researc[h] workers, or of anybody whom he considered "lowe[r] in social status". In all, despite his brilliant achieve[]ments he gave the impression of "a harried man try[]ing desperately to contain his feelings of inadequac

by affirming his power and uniqueness, and by posing as a larger—than-life figure".

Compared to Bose, Ramanujan (1887-1920) was a more traditional man from a more traditional background. He came from a poor, orthodox Brahmin family. The family lived in a town and most of its members, including the mathematician's mother, were educated. But inspite of these modern exposures they remained deeply conservative in style. So much so, when Ramanujan was offered the fellowship from Cambridge, he first refused to leave India because that would go against his conservative beliefs !

The most remarkable aspect of Ramanujan's encounter with the West was the relationship he established with the British mathematician G. H. Hardy. His finest papers were written jointly with Hardy at Cambridge.

The author contends that because of his unexposure to modern life-style, Ramanujan was spared the internal conflicts of Bose so that he could live and die as a functioning mathematician. Yet, the mathematician did once face a deep personal crisis and in 1917 (a few months before he was made an FRS and three years before he died of tuberculosis), while in England, he attempted suicide by jumping on the tracks of the London Underground. He escaped death narrowly, but was badly injured, and arrested.

There are innumerable, interesting anecdotes and details from the personal lives of the two scientists, culled by the author from published material, personal correspondence and interviews. While all readers may not agree with author's premises and conclusions, the book will surely provide them a new insight into the lives of the two great men

Biman Basu

Social Obligation

A Portrait of Nationalised Banks : By H. N. Agarwal, Published by Inter-India Publications, 105-Anand Nagar, New Delhi-110035. First published 1979. Pages 334. Price Rs. 80.

STARTING off with a description of the role of commercial banking in a developing country, the author attempts to examine the social obligations of banking institutions with special reference to India. While he has tried to bring out some revelations, he has not succeeded in saying more than what is obvious.

For failure in fulfilling the social obligations, the author puts the blame squarely on the management of the nationalised banks. He has suggested a greater degree of decentralised administration. He feels that it is "needed for ensuring adequate arrangement of supervision for safeguarding against the corrupt practices among the lower echelons of organisation emerging out of more discretionay powers." A programme of management development has also been recommended in this study although several existing staff training institutions are already taking care of personnel training at different levels.

The author also believes that favouritism in the process of recruitment and placement continues to exist in one form or the other. For this and many other reasons, management development programmes could not succeed in banks. As for deployment of credit, it has been observed that the credit operations of commercial banks continued to fatten the rich borrowers in the name of the poor ones. The generation of employment opportunities also could benefit mainly the rich borrowers in the country. "As such, the real dent of their credit operations on the poor and needy persons appears to be negligible. This brings one to the conclusion that the managements of these banks could not discharge the various obligations while dispensing credit in the economy." The author finds the contribution of nationalised banks (the earlier 14) in mobilising rural deposits comparatively more encouraging though their percentage share of the savings deposits shows a smaller increase than that of the commercial banking system.

Navin Chandra Joshi

Industrial Growth in a Backward State

Financing of Industrial Growth in a Developing Region, by K. K. Upadhyaya, Chugh Publications, 1980, pages vi+112, Price Rs. 50/-.

THE author has analysed the financing of industrial growth of the developing region of Uttar Pradesh for the decade 1951-61 in the book under review. He has examined the balance-sheets of a sample of 25 industrial companies, comprising of a sample of larger units, a sample survey of handlooms and some case studies and has given their capital structure, role of various sources of finance, etc. The good mix of the industrial units studied is a plus point of the book.

Even though conscious of the fact that 'capital' is a mobile agent and, therefore, the industrial development of a region is not hinged to the local availability of capital, the author has discussed this factor as also other factors, such as, the rate of savings and capital formation, which have a macro level relevance, as if they constellate in a corelated framework at the micro level too. Likewise, he draws no particular distinction between a situation where the per capita income in a State may be low and yet the State may be industrially quite advanced. India's per capita income, for example, is one of the lowest in the world, but India is one of the first ten industrially advanced countries. The presence of inexactitude and the absence of critical, in-depth analysis, whether the topic is capital formation process in industry, bank financing or any other, are noticed, in fact, throughout the book.

Overall, the approach to the subject of financing of industrial growth is historical and descriptive. The casual relationships developed lack rigour. The conclusions, such as they are, do not come out with policy alternatives. The print, the paper and the get-up of the book is good.

R. K. Parashar

Emergence of Scientist Technologist

Technology and Socety—An India View by B. D. Nag Choudhury, Indian Institute of Advanced Study, Simla, pp. 112, Rs. 26.

THE role of technology in the modern society is all pervasive. But has it been always so ? Was man's social evolution purely a series of technological and geographical acidents ? Or did technology play a decisive role in the process, and perhaps in the biological evolution of man ? What is the future of the technologist ? These are some of the questions to which answers are sought to be given in the volume under review. The author, a renowned scentist and science administrator, explores through a series of

six lectures delivered at the IIAS the "variety and intimacy of the relation between technology and social institutions" with particular reference to the societal structure in India. In the process he gives us a glimpse of the many ways in which technology has conditioned the evolution of human institutions like governments and international relations. The lectures also bring to light interesting facts about science administration in India.

The author begins with the premise that technology is perhaps biological and as much a product of society as the other way round. Science, he says, "is quite a recent expression of human societal activity, more a product of social evolution and social conditions unlike technology, which appears to be embedded in our biological nature". Three hundred years ago, the linkage between science and technology was negligible; today it is considerable and it will be more intense in future. The outcome of this increasing interaction between the two, he says, is a gradual loss of social control over technology and the emergence of the scientist-technologist as a dominant power in the social and political hierarchy.

The political system and bureaucracy today cannot function efficiently without guidance from "scientific advsers", especally on matters that relate to complex scientfic and technological aspects of their decision making. This dependence, not unexpectedly leads to a curious situation. The scientists become "patronage seekers on the hierarchial totem-pole" Instead of giving objective and critical assessment of problems they give advice that "only reiterates and strengthens the notions of the political decision makers". In such conditions the advice, in reality, is not only not helpful, it can sometimes be "disastrous" (This statement is significant, for the author himself had at one time held that office.)

What we really need, the author concludes, are "scientists and technologists who are prepared to bear the burden of unpopularity that often transcends the immediate political and industrial interests of the society, for the sake of their vision and for the sake of the generations to come".

The arguments forwarded by the author are convincing and they are supported by several actual case histories. They will provide valuable guidance not only to the scientist and technologist but also the decision maker at the top of the hierarchial pyramid.

—B. I

Role of Grameena Bank

(Contd. from page 29)

The Bank has filled the void in the rural credit structure which was created by the operation of certain provisions of the 20-Point Economic Programme.

Recovery of Loans

For all agencies lending money to the rural sector recovery of loans is the biggest problem. In spite of the fact that the T.B.G.B. has been taking extraordinary care in assessing the credit requirements of the borrowers as well as taking follow up measures to supervise proper utilisation of borrowed funds, still, there are some "black sheep" among the borrowers of the Bank. Even though the Bank has gone to the door steps of the weaker sections, their motivation to make use of funds for productive purpose and repayment of loans promptly has not been strengthened. Failure of monsoons in certain villages, failure of irrigation system or crop failure caused by pests and diseases have reflected in the poor repayment capacity of borrowers. Consequently, certain branches of the Bank have been facing bad debts. But, by and large, the accumulation of bad debts does not seems to be a big problem.

Suggestions

Since the Bank has proved to be a powerful agency in the rural development of the area covered, it is necessary to extend the net work of its branches in the two districts as well as extend its jurisdiction to the neighbouring two districts viz. Chitradurga and Shimoga which are partly irrigated by the Tunga, and the Bhadra river projects. This extension in the area of operation will help in covering the needs of the entire rural sector under the Tunga, Bhadra and Tungabhadra river valley region.

The problem of repayment can be tackled effectively by integrating banking with storing and marketing. The activities of R.S.S. can cover lending, storing and marketing. This arrangement ensures better returns to the farmers, as well as assures repayment of loans. Further, the irrigation projects should be operated efficiently. The agricultural department should work out crop planning and also develop suitable measures to control pests and diseases.

Owing to the operation of the 20-Point Economic Programme, many money lenders in the rural sector have restricted their lending activity. A huge amount of black money has accumulated in the rural sector. The Bank can attract these idle funds into its credit stream.

Since sericulture has gained popularity in this region the Bank can develop community sericulture farms and community sericulture rearing houses for the weaker sections.

It is, further necessary to provide good accommodation to its staff by constructing its own buildings. It is also desirable that the salaries of the personnel employed by the Bank are commensurate with the services rendered by them. □

The Flickering Flame

(Contd. from page 3)

into non-competing independent corporations. But this will help only in decentralising administration and not in improving initiative and enterprise for which an element of competition is essential. When 20 nationalised banks can compete with one another (which is, of course, the other extreme) there is nothing wrong in allowing five life insurance corporations to compete.

It is hoped that Government would take immediate action on the Committee's report so that the flickering of the flame of life caused by the shaky hand of Life Insurance Corporation can glow steadily with more brightness. □

Towards Economic Recovery

Continued from Cover II

doing is trying to see that the other situation meets up with the prices so that people are not squeezed. Some prices can come down with better production and that is why all our stress is on producing goods and seeing that they reach the people with better distribution system. That is the real answer to it.

It is quite true that the coal industry has been in the doldrums. Many reasons are there. Partly it is also this that many of our private sector people do not, even when they are making good money, modernise, whether it is the coal mine or the factory. Suddenly you come to a situation where things are grave. This is what has happened with coal and we find that it is not being looked after properly. Then it was nationalised and that dislocated things. But I think production has improved and it is one of the things which we are following up with greater attention.

Rural Change

I think it is a very wrong perception to say that nothing has been done for rural India. I would not say that the rural scene has been transformed or that it is in any way satisfactory. But it has changed a lot since independence. Many diseases have been eradicated. Where you saw mal-nutrition amongst children, it has largely gone. In fact, in whole tours I did not see a single child like that. They are better nourished obviously, because they looked healthier; their eyes are brighter. There are pockets of abject poverty, but overall I would say that people are better dressed. All the programmes, whether health or education, are increasing, but the population is also increasing. You can't have everything both ways: don't have family planning but give more this; don't do this, but do that. You see, unless everybody is willing to accept certain norms and discipline, it is going to be very difficult, and that is the major difficulty. The other thing is that the best of programme, sometimes in implementation, does not yield the results that one thought it would yield What is wrong with our system is its rigidity. Once something is decided upon, it is very difficult to change it. And when you try to change it, instead of simplifying, it becomes more complicated. We tried to decentralise. The whole idea of Panchayati Raj and so on, was decentralisation. But it did not quite work like that. But I think all these things take time. □

Harnessing The Brahmaputra

P. K. Das*

THE great river Brahmaputra flows from the Himalayas through the central part of the North-East India to the Bay of Bengal. This river is the backbone of the region and the great river governs the region in all respects. The Brahmaputra should be utilised for the development of this region. Since it is not done, it has turned out to be a river of sorrow. Recently the Government of India decided to form a Brahmaputra River Board for preparation of a master plan for the control of floods, bank erosion and improvement of drainage in the Brahmaputra valley. Proposals are there for the construction of a multipurpose river valley project for generation of multiple benefits like irrigation, power and navigation. The Brahmaputra can no longer be considered as essentially a flood control problem. A rational approach should aim at combined multipurpose water resources development of the entire Brahmaputra Basin for the economic stability and all round development of the region. The experience of the Tennesee Valley Authority in the United States of America has shown the immense potentiality of integrated river-basin development for triggering economic growth of the region.

The immense development potential of the north-eastern region in terms of both natural and human resources is now well recognised. It is, therefore, necessary that the work of the proposed Board instead of being immediately limited to a single purpose for flood control should also aim at developing irrigation and power. This will help agricultural and industrial development of the area. At a recent symposium on the River Brahmaputra held in Gauhati, it was suggested that immense water potentialities of the Brahmaputra river should be utilised. It was also suggested to treat the Brahmaputra as a national property. It was felt that this river cannot be utilized without the help of Central Government as well as an International body.

An expert committee has observed that the Brahmaputra River waters may be canalised to the Ganga River during the early monsoon season.

It may be noted that the origin of the Brahmaputra valley which dates back to the last two million years is a story of alluviation of the foreland depression in between the Himalayas in the north and the Shillong Planteau in the south. The valley according to the geo-scientists is in a state of perpetual flur owing to rapid geomorphological changes and this is aggravated by the earthquakes that occur in the valley which is a geologically unstable zone. The control of waters of the system for the peace and prosperity of the region and the country, is indeed a great challenge to the scientists and technologists. A proper study of the associated problems and issues requires investigation of a host of factorss and is to be spread over a long period. The development of the water resources of this important river system holds an important key to the future prosperity of the region and for the country as a whole. □

* Department of Geology, Sibsagar College, Assam.

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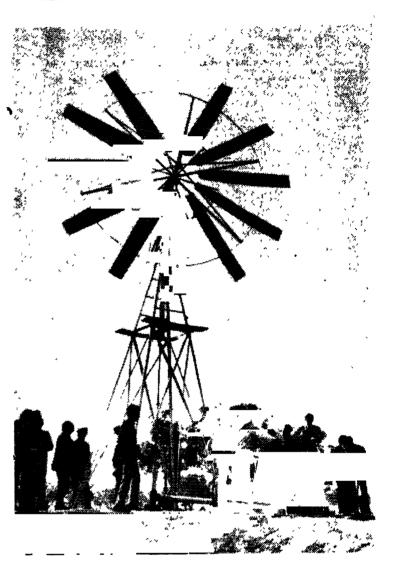
Windmill —A Boon for Small Farmers

D. B. Singh

THE windmill set up on the sprawling farm of the extension Training Centre at Ghazipur is operating for a couple of years now. With the water lifted through windmill, it has been possible to provide supplement irrigation, whenever required, and also raise a good summer crop During the year of scanty rainfall the stored water has provided a great relief.

The present cost of the windmill of Ghazipur is around Rs 5,000 excluding boring It includes installation and two years of after sales service

At Ghazipur farm, thanks to the windmill irrigation, it has been possible to grow vegetables in 2 5 acres of land.

Rs. 11,000 cr. Plan for Drinking Water

THE Union Ministry of Works and Housing has ddrafted a Rs 11,000 crores plan for drinking water supply and sanitation in the country during the decade 1981-90. This plan has to be accepted by the Planning Commission and the Union Cabinet before it is implemented.

This is in accordance with the United Nations declaration that this decade should be devoted to provide drinking water facility, a primary need of the people, along with taking care of sanitation so that a major step could be taken towards making the world disease-free.

Reports have been obtained by the Ministry of Works and Housing from all the States to ascertain the precise number of problems of villages which have to be tackled first in respect of drinking water.

The States have been told that the question of drafted a Rs 11,000 crores plan for drinking water and the Centre is prepared to provide rigs and other assistance to accelerate the process. UNESCO has also come forward to help India achieve its targets

While the expenditure of Rs 11,000 crore would achieve hundred per cent coverage in regard to drinking water both in urban and rural areas, the same could not be said about sanitation. In case of cities, it is estimated that 80 per cent population will be covered with either sewerage or sanitary toilet for safe disposal. Seventy-five per cent of rural India would still be facing the same condition as at present because only 25 per cent villages are expected to be covered under the sanitation scheme

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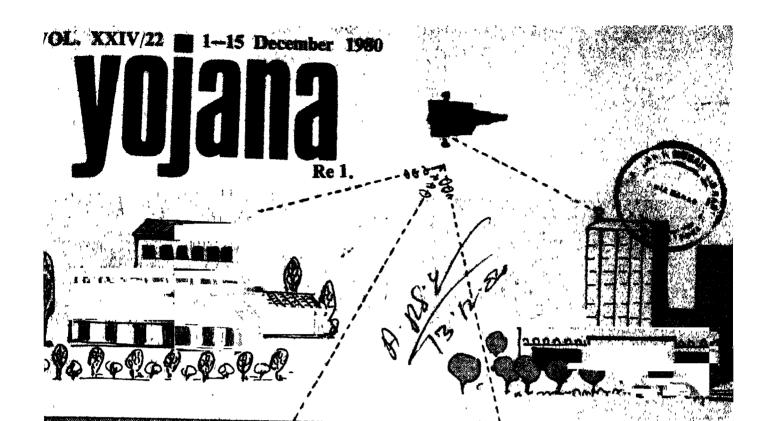
REVOLUTION IN PRINTING

A quarryman's family engaged in stone cutting

The Quarry Workers of Yanamalai

J. Christopher Daniel*

SINCE the inception of serfdom during the middle ages, the position of bonded labourers has in no way been better than that of a slave. Under the pretext of paternal leadership these slaves have been forced to lead a life of servitude with little consideration for the betterment of their socio-economic conditions. Their duties and obligations were defined mainly in terms of quantities of produce in some form or the other they must give to their feudal lords Despite its abolition under the 20-point economic programme enunciated by the Prime Minister, Mrs. Indira Gandhi, the institution of bonded labour has not been completely eradicated.

It is really disquieting to note that even the workers of Yanamalai Quarry in Madurai District in Tamil Nadu have not been spared from the bondage of their masters.

Situated on the western side of the Yanamalai Hill the quarry is about 15 kilometres away from the temple city of Madurai. Rich in natural resources, the quarry supplies stone pillars, slabs, mile-stones and gravels of various size and shapes. It caters to the needs of people and organisations engaged in the construction of buildings, roads and other public works. The Yanamalai Quarry came into limelight following the proclamation of the 20 point programme in 1975. About 100 of its workers were liberated from the stranglehold of the brokers, private contractors and owners of the rocky land.

The quarry which is under the jurisdiction of the Madurai East Panchayat Union, has now a total population of about 900. Eighty per cent of them have migrated to this place to earn their livelihood. But it is really shocking to observe that despite the hazardous nature of their work for the economic development of the region, they are denied certain essential working conditions and basic amenities of life. There is no primary school for a large number of school-going children Nor are there dispensary or first-aid centre, drinking water well or community welfare centre for the workers One has to walk for miles together for seeking medical or even for first-aid help Availability of medical facilities is of utmost importance as the workers are prone to such occupational diseases as T.B. and silicosis In a study recently conducted by an Investigator of the Madurai Institute of Social Work on 50 quarry workers, 74 per cent of them were found to be suffering from silicosis

Welfare Agencies

According to local leaders interviewed by the author, the quarry has been adopted by a number of foster parental agencies like NSS, nearby colleges, banks and voluntary social welfare organisations without any uniformity in their methods of operation and objectives One of the headmen remarked that the attitude of these agencies to run community welfare services is mere amateurish then real. "Even group comes and interviews us by giving us high hopes and false promises. But nothing comes to reality", he said

Of late, one Rev. Father Joseph Santhanam adopted the quarry under the rural uplift programme launched by his chuurch. With his indefatigable attempt, genuine work and missionary zeal, he has been able

(Contd. on Cover III)

*Assistant Professor, Madurai Institute of Social Work, Madurai

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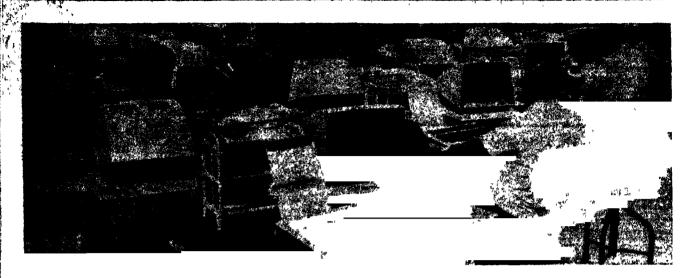
EDITORIAL

National Unity

THE recent communal incidents and regional agitations have again rudely reminded us of the age-old malady of our national disunity. It was this lack of unity which earlier led to foreign rule and later to the partition of the country, and, after Independence it has been periodically obstructing the economic development and threatening the freedom and integrity of the country. What is particularly distressing is that, as the Prime Minister said, the communal riots have now become more brutal and lethal.

Foreign rulers systematically encouraged communalism, casteism, linguism and regionalism, as part of their policy of divide and rule. It was expected that after Independence that these forces would die out and the entire nation would concentrate on economic and social reconstruction. But this did not happen and on the contrary the divisive forces became stronger than before. The main reason for this is the short-sighted strategy of the various political parties to exploit these divisions for getting block votes in the elections. Economic vested interests have also often used the fissiparous tendencies to divert the attention of the people from real socio-economic problems. The poverty and ignorance of the masses have facilitated these elements to exploit them. Unfriendly foreign countries who want to weaken India and bring it under their influence have also indirectly aided and abetted the internal mischief-makers.

The electrifying national unity brought about by the Chinese attack in 1962 was hoped to be a permanent feature and activities of the earlier National Integration Council were wound up. But since the divisive forces have once again raised their heads, it was timely for the Central Government to revive the Council and to make it fully representative of the national scene. The meeting of the Council held recently in New Delhi has started the work of strengthening national unity in right earnest. Its decisions, if vigorously implemented, will provide solutions both to the short and long-term problems of national cohesion. The fact that major political parties and social groups have through the NIC arrived at a consensus is an earnest of eventual success in this task. It is the duty of all the people to cooperate with the Council so that they can move forward towards prosperity and social justice without distraction. □

A view of the phototypesetting section

Revolution in Printing and Communication Technology

V. N. Chhabra*

TECHNOLOGY influences our lives every day. Periodically in the history of mankind new technology has brought about a revolution in our life styles. The art of communication through written symbols, known to have been in practice since 4000 B.C., was first greatly advanced by technology when Gutenberg invented moveable types and printed the first Bible over 500 years ago in Germany. That event signalled a major revolution in printing and communications in our times.

Clearly, no single invention has ever accelerated to such an extent the progress in almost every field of human endeavour as the invention by Gutenberg. The art of printing from moveable types—cast with the help of hand foundry instruments from matrices made from leters and signs hand-engraved on steel blocks—spread rapidly in Europe and other parts of the world during the sixteenth century. In India the first printing press was set up in the year 1556, in Japan in 1590, U.S.A. in 1939 and China in 1644. The art of printing was introduced to South Africa in 1784 and to Australia as late as 1802.

The technology of printing remained virtually unchanged till the nineteenth century when high speed printing machines and type casting machines were perfected. With better quality paper and the development of photo-engraving technique it became possible to reproduce illustrations and photographs in books and newspapers. The *London Times* was the first newspaper to have installed high speed rotary presses in 1814. In India, perhaps in Asia, the honour of being the first newspaper printed on rotary machine was won by *The Statesman* when it installed the modern newspaper printing machine in July 1907 in Calcutta. Soon after that other newspapers in Bombay, Madras and Delhi also set up similar machines.

The Impact of Electronic Technology

However, in recent times rapid developments in electronic technology, the fall-out from the vast research effort put in and the implementation of various space programmes have brought about yet another revolution in the field of printing and communication.

"The invention of printing is a remarkable landmark in the progress of man, no less revolutionary than the discovery of speech and writing ....."

—Indira Gandhi

The most significant impact of this new technology is in the composing and setting department. Newspapers, books, magazines, directories, etc., which were hitherto mechanically composed on Linotype or Monotype machines commonly known as 'hot metal' machines are now set electronically on machines known as 'keyboards, terminals and photosetters. The 'keyboards' which resemble electric typewriters translate the copy into a machine readable form through electrical impulses or codess which are in turn stored on

* Manager, Job and Process Departments, The Statesman, New Delhi.

a variety of media such as paper tape, magnetic tape or floppy disc with immense storing capacity. A floppy disc not bigger than the size of an ordinary gramophone record can store over a quarter of a million printing characters or codes. The manuscript thus electronically stored can be reviewed on a visual display terminal (not bigger than an ordinary TV screen) for editing correction or mistakes, incorporation of house styles and word hyphenation, etc.

The finally edited tape or disc is then fitted into a phototypesetting machine which, depending on the technology it employs, translates the electronicaly recorded codes into letter images on film at a speed upto four hundred thousand pritmg characters per hour. This is indeed incredible as the speed of an average operator on a hot metal machine is 200 newspaper lines in an hour.

The phototypesetting machines offer a vast variety of type faces in various languages and wide ranging sizes at comparably economic costs.

Colour Scanners

The computer technology also enables reproduction of colour transparencies and designs at high speed. The colour matching which used to involve hours of hand retouching by highly skilled operatives can now be carried out electronically by machines known as colour scanners. With the help of such machines colour photographs of sports and news events can be reproduced in daily newspapers.

Man-Machine Communication

The ability of man to be able to talk to a machine has been an academic curiosity for long. Technology has helped develop machines which with the help of a computer, can recognise 15 million different sentances spoken by different individuals in natural English text by electronic reading on screens. In the not too distant future human voice typewriter will be on the market.

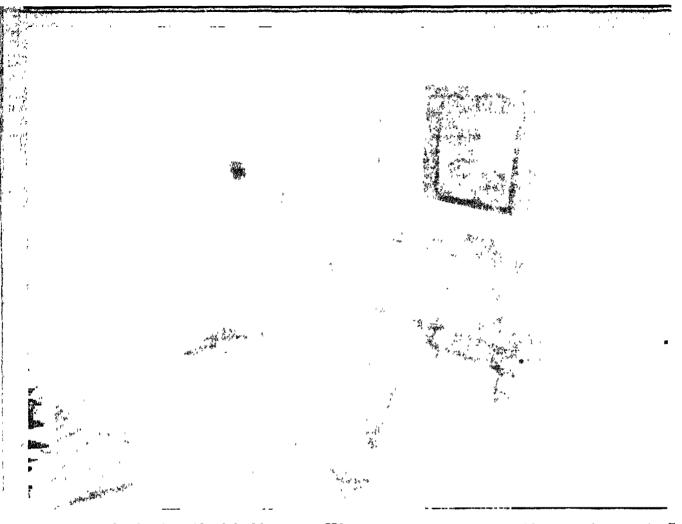
January 1, 2001 A.D

Let us examine a possible scenario in a newspaper office on the 1st day of the 21st century. The editor or publisher will arrive in his office in the morning (if in fact, he even found it necessary to leave his house) and ask his computer for a summary of previous day's happenings. Having received an overall picture he may choose to converse with the computer on any specific subject. He may wish to discuss advertising revenue forecast or sales of his paper in various centres or even review a confidential electronic letter from his correspondent on the stability of a military ruler in a neighbouring country. Having satisfied himself with the state of things, he may then dictate a memorandum into the same computer for distribution to various departments or issue a notice for instant display on the electronic notice boards fitted at various positions.

As a part of the same all-encompassing system, reporters will carry communication terminals not larger than a pocket-size calculator which will be used on the spot to gather news in editable electronic form. The terminal could store the information in a bubble memory until the reporter gets to a telephone through which the story will be transmitted acoustically to a computer in his office directly by his portable terminal. Alternatively, a written report could be transmitted via radio channel directly to his newspaper office.

Electronic Camera

The news photographers will use an electronic camera capable of taking pictures in almost total darkness. The image information from the camera could be radioed or sent via telephone back to the

Making up the newspage by paste up

An operator at the planning table of the Magnascan 570 -page composition system with new colour monitor

newspaper for processing and enlargements. No dark-room or process section for making blocks will be required. Back in the editorial room the editor will, by referring to electronic files, recall all incoming stories received through various channels and stored in a central computer, on his video screen and carry out editing functions on intelligent terminals. The chief sub-editor would assemble and display the news stories and advertising material on a big television screen and with the help of an electronic pencil shift the positions of stories, enlarge or reduce them to fit into the available space.

For newspapers or magazines which carry colour, the image assembly will be displayed in full colour. The editor with the help of a computer can modify the colours, bring out special effect, e.g., add deep blue in the sky, redden the cheeks of a model or drop out the background altogether—all in a matter of minutes.

The finished pages fully composed on electronic screen will be fed to a photosetter where laser beams will transfer the electronic data directly on a printing plate ready for the press almost instantly. The image of made-up pages in black and white or colour can also be transmitted to distant printing plants through satellites or microwaves.

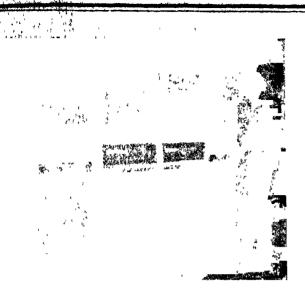
Once on the printing machine the pressman will, by voice, adjust registration or make any other adjustment while the press is running at a speed of several thousand copies per hour.

The rate of progress achieved so far provides us ample evidence to believe that the above scenario may well be a real thing not only in the Western world but also at home, on January 1, 2001.

New Challenges

Whenever society or business is confronted with new problems, inevitably technology comes forward with solutions. For instance, the old concept of printing the entire publication at one centre and distributing it nation-wide cannot survive the high cost of transportation and distribution. Today many publishers have set up multiple plants at various regional centres to meet the local need. Technology offered a way out. For some years now The Hindu has been successfully transmitting fully composed pages from its main centres at Madras to Banglore, Hyderabad, Madurai and Coimbatore. Page facsimiles are transmitted to receiving centres through telephone cables. Within minutes the films containing all text matter originally composed at Madras are transferred to plates ready to be printed at rotary presses installed at various cities.

Satellite Transmission

With the use of microwave equipment and satellite newspapers can transmit true facsimiles of page layouts to distant centres. *The New York Times* has perfected a system by linking digital microwave with a laser facsimile platemaker which enables the *Times* to compose pages in their city offices and transmit

A computer in the control room

:m to their printing plants several miles away al-)st instantly. A considerable research activity is ing carried out in USA to perfect the use of fibre tics technology for the communication system. vices using the enormous transmis ion capability the optical fibres will enable newspapers to send to 3,000 pages of solid text from editorial offices distant printing centres in one second, it is pre- :ted.

Recently, *Time* made history when in March this ır it became the world's first magazine to transmit pages through a satellite to its printing centres Hong Kong. The pages, in the form of electronic ta, are first sent to San Francisco from *Time* offices ı receiving satellite above the equator, re-transmit- l over the Pacific on an international ellite, when after travelling a total distance of over 0,000 miles the same information is automatically itten out on the film and transferred to a printing ıte ready for press. Prior to this *Time*'s editorial py took over 18 hours of air travel to reach Hong)ng. Now pages are received at a speed of four ges per 40 minutes. Consequently Asian readers *Time* can buy their copies 24 hours earlier than fore.

Now in a similar fashion, The *International 'rald Tribune*, a daliy newspaper from Paris, is ing published simultaneously from Hong Kong by ısmitting its pages from Paris to Hong Kong via satellite.

With India's first communication satellite coming ı next year, newspapers will be able to transmit ıde-up pages almost instantly and distortion free various cites and towns in the country. We ı look forward to many more geographic editions rying latest national and international news even remote areas.

ıe new Electronic Media

The new technology which has revolutionised news-)er production techniques is now poised to chal- ge its very existence. Developments in the fields of electronics, telephone and TV systems have helped to develop new media altogether.

Recently, the British Post Office has launched a new medium under the name of 'Prestel', which provides immediate access for users to a store of useful information (normally provided by newspapers) by an adopted domestic TV receiver and a telephone-line. The British Post office, who have developed the system, manage the computer network with several information agencies who supply information in various fields of expertise. Imagine sitting in your drawing room, having access to half a million different pages of information stored in a remote computer, any of which can be viewed on a TV screen by simply pressing an electronic device, not bigger than a desk calculator. The electronic medium offers updated information at an incredible speed. Should you find the information produced inadequate you press the complaint button and the computer passes on your complaint to the information agency which has supplied the information and will convey to you the reply it receives back The subscriber can also order fresh information. While the 'Prestel' requires a specially designed TV set and telephone lines, the systems introduced by BBC and ITV called 'Ceefax' and 'Oracle' respectively, rely on normal television transmission systems. It is estimated that in UK, within the next five years, there will be over a million TV sets equipped to receive the new medium offering such vast and updated information as is well beyond the scope of newspapers.

Relevance to India

After a general overview of the technology abroad we naturally would wish to examine its relevance to conditions in India, where from all accounts we are quite content with the traditional technology by which text matter is composed by moveable types cast in lead on hot metal machines i.e. Linotype and Monotype. It is argued that we are not yet ready to take a jump from hot metal types to satellite transmission. This argument may have some validity, but we have little choice in the matter.

The traditional technology has been totally discarded in the West and it is no longer possible to replace our existing machines by new ones. Spare parts are increasingly becoming expensive and difficult to obtain. The cost of setting up manufacturing plants for such machines in India would be prohibitive.

Recently an American magazine made history by transmitting its pages through a satellite to its printing centres in Hong Kong.

On the other hand, the technology is most suited to our needs—both present and the future—for reaching the declared national goals of eradication of illiteracy and providing free access and two-way flow of information to all citizens of India living in the remotest corners of the country. We also need high quality and cost effective printing and packaging for export markets.

Fortunately, both industry and the Government have lost a little time in grasping the significance of the new technology and the urgent need to adopt it. Many newspaper and commercial presses have already switched over to photo-typesetting, colour scanners and web offset printing machines. The language newspapers who in the past were way betind their counterparts in metropolitan cities have stolen a march over their big brothers by being the first to adopt the new technology.

In the recent past the country has witnessed a boom in magazine and pictorial journals. The new technology and sophisticated machinery have helped achieve this phenomenal rise in their number as well as circulation. Superior colour reproduction and better printing have brought in more advertising earnings and profits.

Constraints

The Government authorities have no doubt taken some laudable steps by liberalising the import policy and have also to some extent reduced custom levies on some of the items of the new technology. But

The big question is : Can a small printer survive the onslaught of new technology? The answer to this question is unfortunately in the negative.

majority of the 30,000 odd printing and publishing units in the country find themselves in a state of quandery. The big question is : Can a small printer survive the onslaught of new technology? The answer to this question is unfortunately in the negative, unless of course steps are taken to :—

1. Educate him about what the new technology is all about and its relevance to his needs.
2. Help him to identify the right kind of eq uipment he needs to import.
3. Provide the necessary financial resources o easy terms to enable him to invest in th new equipment which from all accounts expensive.
4. Train him and his workmen in the use an upkeep of new equipment.

Electronic equipment also needs careful handlin It functions best in air conditioned environments ar requires uninterrupted power suppy without fluctu tion. Our printing schools which have not kept then selves abreast of new developments need drast revamping. New equipment and re-training of teac ing staff will be necessary.

Doubtlessly the Government has a key role to pl in the removal of the above mentioned constraint Import duties continue to be prohibitive and full anomalies. While on high speed rotary newspap printing machines are levied custom duties of 25 pe cent and are under open general licence, the san machines with a speed of less then 25,000 copies p hour, which are adequate for small newspapers, attra 52 per cent duty. The majority of new machin carry electronic and computer technology and cutor authorities insist on charging 120 per cent duty such items. There is urgent need for fixing a ur form cutom duty for all items of printing machiner including essential inputs like photographic paper ar films which are not manufactured in India.

The challenge the new technology in printing an communication poses is all encompassing. For t changes it will set in motion are destined to affe and alter the life styles of us all. This is a matter th deserves the fullest attention—challenge that must met. □

Economic Development in Indonesia

Navin Chandra Joshi*

INDONESIA, the world's largest archipelago between two continents, Asia and Australia, became free from Dutch domination on 17th August 1945, about two years before India's independence. It has a land area of 735,354 square miles claiming territorial waters nearly four times that size. The country has about 13,700 islands (of which about 6,000 are inhabited) scattered over 3,200 miles from east to west and 1,100 miles from north to south. The main islands are Sumatra, Java, Bali, a major part of Kalimantan, Sulawesi and Irian Jaya, the western part of New Guinea. In addition, there are two large groups of islands : the Moluccas and the Nusa Tenggara islands.

In Indonesia, the world's largest archipelago, more than half of the land is forested and a significant area is mountainous and volcanic.

More than half of Indonesian land is forested and a significant area is mountainous and volcanic. Java alone has 112 volcanoes, 15 of them active. Most of Indonesia lies along or just below the equator. The country, therefore, has a tropical monsoon-type climate featuring slight changes of season and temperature, low winds, high humidity and periodically heavy rainfall The 1978 population of Indonesia was an estimated 141.6 million, increasing from 119 million in 1971 and 97 million in 1961. Today, Indonesia is the fifth most populous nation in the world, exceeded only by China, India, the Soviet Union and the United States. Although the population is widely dispersed throughout the archipelago, the heaviest concentrations are located in the fertile islands of Java, Madura and Bali. The average population density for Indonesia as a whole is 184 per square mile. The population growth rate is estimated at 2.1 per cent per year. It is expected that the population will rise to about 250 million by the year 2000 AD. Based on the 1971 census, unemployment in Indonesia's labour force as a whole was 8.8 per cent while in Jakarta the rate was 12.8 per cent.

Five Year Plans

The economy of Indonesia is based primarily on small-scale agriculture, export-oriented estate agriculture and mineral and oil exploitation. The manufacturing sector is still in the early stages of development but in recent years certain areas of this sector have become increasingly important to the economy. Small-scale agriculture, employing about 60 per cent of Indonesia's labour force, consists mainly of food crop farming for domestic consumption and production of rubber, coffee, pepper and tobacco for export. In recent years, while fishing has also become an important export item, crude oil has been increasing steadily as the nation's biggest foreign exchange earner. Even as the country is a member of the ASEAN, Indonesia has been trying to diversify its foreign trade amongst many countries.

Planning in the real sense started with the First Five Year Plan in 1969. The GNP in 1976 was US$ 23,760 million with a per capita income of $ 160 which was twice that of 1966. The current Third Five Year Development Plan (1979—1984) envisages that population will grow by about 2.0 per cent per annum, real per capita Gross Domestic Product will increase by 4.4 per cent per annum—i.e., by a toal of about 24 per cent in the five-year period. The sectoral growth rates of the Third Plan are as given in Table I.

Table I

Sectoral Growth Rates and Structural Change

(In percentage)

Sector	Estimated share in GDP, 1979-80	Average Annual growth rate in Third Plan	Projected share in GDP in 1983-84
1 Agriculture .	31.4	3.5	27.2
2. Mining . .	17.9	4.0	15.9
3. Industry .	10.2	11.0	12.6
4. Construction .	4.9	9.0	5.5
5. Transport and Communication	4.6	10.0	5.4
6. Other sectors .	31.0	8.1	33.4
G.D.P. . .	100.0%	6.5%	100.0%

It is expected that during the Third Plan period, there will be an average annual rate of economic growth of 6.5 per cent. The share of agriculture in GDP is expected to decline from 31.4 per cent in 1978-79 to about 27.2 per cent in 1983-84 and that of mining from 17.9 per cent to 15.9 per cent. On the other hand, the combined share of the industry, transport and communication, construction and other sectors is expected to increase from 56.9 per cent at the end of the Third Plan so that this structural change will constitute another step toward achieving a more balanced economic structure and stronger basis for future self-generating growth.

Youth Power

It is significant to note that the persistent high share of youth (under 20 years of age) in the total popula-

*Reader, Motilal Nehru College, New Delhi.

tion of the country continues to pose a number of development problems and challenges. The high proportion of persons under 20 years of age has put heavy strain on the nation's ability to provide basic social services, particularly education and health. The total labour force is very much determined by the present age structure of the population and is projected to increase by about 6.4 million during the five-year period of the Third Plan. As such, the economic growth rate of 6.5 per cent per annum is being pursued in such a way as to provide new jobs for at least the increase in the labour force over the period.

The economy of Indonesia is based prominently on small scale agriculture, export-oriented estate agriculture and mineral and oil exploitation.

The total gross investment estimated at around Rupiah 4,915 billion or about 21.2 per cent of the GDP is expected to increase to around 24.6 per cent in 1983-84. To finance the investment requirements, total savings are expected to increase from 21.2 per cent in GDP in 1978-79 to 24.6 per cent of GDP in 1983-84. To achieve a higher degree of self-reliance in development, a large proportion of these savings will be mobilised domestically amounting to about 79 per cent of the total savings, or 19 per cent of the GDP. The rest will be secured from abroad for supplementing the domestic efforts. Foreign savings form about 21 per cent of the total savings. These consist of official aid and loans and private capital inflow. These funds are utilised for importing capital goods, skills and know-how which are not yet domestically available. Foreign aid is accepted so long as it does not contain political strings as also if it is within the capacity of the country to repay. Private foreign investment is promoted in the form of joint ventures with domestic enterprises, particularly to finance productive projects requiring large scale capital and sophisticated technology, export-oriented industries, and import substitution industries with a view to create more job opportunities, to earn or save foreign exchange and to allow for transfer of technology and know-how.

Foreign Capital

In the matter of foreign investment, the locations for a production sector are determined according to the supply of raw materials and the economic potential of the region concerned. The other consideration is the protection of the existing weak economic groups in areas where they will not compete with existing traditional enterprises or with enterprises reserved for weak economic groups. At the outset, at least 20 per cent of the shares must be held by national enterpreneurs. Within 10 years after commercial production, the national share participation must increase in stages to at least 51 per cent. All foreign investment (new) must constitute a joint venture with Indonesian partners. New enterprises which invest private foreign capital in fields of goods and services which have been given priority by the Government are granted a tax holiday for a period of six years along with the investment allowance and other benefits. To date, more than 440 national and foreign companies—including American, British, Japanese and Australian firms—have been granted licences to develop more than 100 million acres of forest at an aggregate total investment value of about $ 1.3 billion. Foreign investment, valued at abo $ 578 million, accounts for almost half the total capit invested in forestry.

Oil Wealth

In the matter of oil, its production during the Thi Plan period is envisaged to increase from 582 milli barrels in 1979-80 to 668 million barrels in 1983-8 With 90 per cent of Indonesian territory still unexplor geologically and a 39 per cent discovery success ra for new drilings, there is a strong basis for optimis concerning the country's potential petroleum and nat ral gas development. Petroleum companies now oper ting throughout the archipelago are planning continued growth until the end of the century. Seve factors should result in increased demand for Ind nesian oil and natural gas products, both domestica and in world markets. An important development Indonesia's petroleum industry is the recent emergen of natural gas as a valuable export, second only to As such, long-term contracts for liquefied natural with Japan and the United States are going to major exchange earners now. Presently, Japan and U.S.A. are having the major share in the import petroleum from the country.

In its pricing of crude oil, Indonesia does not the posted price system widely used by countries the Middle East so that the Indonesian oil is quo at realised market prices. Indonesia's crude oil commanded a premium over the international mar price of the Middle East oil because of its low sulp content and Indonesia's proximity to Japan and west coast of the United States, its major export m kets. Indonesia joined the Organisation of Petrole Exporting Countries (OPEC) in 1962 and it adheres all OPEC resolutions.

Even as Indonesia is exporting oil to the develo world, the electricity power sector in the country still weak in terms of generating capacity. The Th Plan seeks to increase power generation by ab 3,900 MW which will approximately double the e ting capacity. Transmission and distribution lines need to be expanded throughout the country. Si larly, communication, road and rail transport other infrastructural facilities need to be develop Housing, water supply, medical facilities and educat are the sectors which have been neglected hithert

Growing Exports

Foreign trade plays a vital role in Indones economy. Export of goods and services averaged 2 per cent of GDP and imports averaged 20.5 per

Even as Indonesia is exporting oil to the develo countries the power sector in the country is still w in terms of generating capacity.

of GDP. Although petroleum products are the n significant of Indonesia's exports, other primary c modities, including tin, copper, rubber, palm oil kernels, coffee, tea and timber, are other contribu to the export earnings. Indonesia's largest tra partners are Japan and the United States, which gether in 1976 accounted for 70 per cent of t exports and 45 per cent of total imports. In Febr 1977, Indonesia concluded with other ASEAN (A ciation of South East Asian Nations) member coun

an agreement on preferential trading arrangements. Under this agreement ASEAN members extend trade preferences to each other in certain basic commodities including rice and crude oil and in products of ASEAN sponsored industrial projects. These arrangements, aimed at expanding intra-ASEAN trade, cover 71 items providing for tariff reductions of between 10 to 30 per cent. Now total exports are projected to grow at an average annual increase of 11.2 per cent during the Third Plan period. Another significant aspect is that by the end of 1981-82, the value of non-oil exports is expected to exceed the net value of oil exports. The balance of payments position is as given in the following Table II.

Table II

Balance of Payments

(In millions of US dollars)

	1979-80	1983-84
A. Goods and Services		
1. Exports	8,984	14,010
Non-oil (f.o.b.) . .	4,046	7,680
Oil and LNG (net) .	4,938	6,330
2. Imports (C & f.) . .	8,711	13,870
3. Services (net) . .	1,697	2,499
4. Current Account . .	—1,424	—2,359
B. Official Transfers and Capital . . .	2,551	3,650
1. Programme Aid . .	220	185
2. Project Loans . .	2,331	3,465
C. Repayments of Official loans	630	1,225
D. Other Capital (net) . .	147	414
E. Monetary Movements .	350	450

Foreign exchange saving policies are implemented through more efficient import substitution policies supported by integrated measures involving the agricultural, industrial and trade sectorss. While export expansion and import substitution activities are carried out simultaneously, priorities are accorded on the basis of the criteria which ensure optimum use of domestic resources. The business community of the country has a crucial role to play in the nation's endeavour to realise the major objectives of economic development. The Government itself encourages and promotes entrepreneurship as well as business managerial skills.

Trade with India

As for trade between India and Indonesia, the June 1978 Trade Agreement between the two countries and the subsequent Memorandum of Understanding reached in 1979 form the basis. With her technological maturity, India can be a benevolent cooperator in Indonesia's economic development. Indonesia's main exports to India consist of palm oil, spices like pepper, nutmegs, cinnamon, cloves, aniseed etc., essential oil, natural gums, dyeing and tanning material, perfumery and ayurvedic items, rock salt, sunflower seed oil, vegetable waves, cocoa beans and so on. Indonesia's imports from India are mainly iron and steel goods, a wide variety of machinery including rice-mill machinery, iron oil-crushing machinery, hand-tools, lathes diesel pumps and so on. In 1978-79, India also supplied about 52,000 tonnes of rice to Indonesia and since India is still surplus in rice, there may be more rice exports in the near future. The tables III and IV give an idea of the extent and nature of foreign trade between the two countries.

Table III

India's Exports to Indonesia

(in million Rs.)

Items	1976-77	1977-78	1978-79
1. Rice . .	..	84.6	65.1
2. Sugar and honey . .	347.0	..	483.0
3. Feeding stuff for animals .	2.5	0.8	5.8
4. Tobacco manufactured .	..	4.0	0.7
5. Oilseeds, oil nuts and oil kernels	2.9	..	..
6. Cotton . .	3.5	..	..
7. Crude vegetable materials .	2.1	0.9	5.9
8. Chemicals and related products	9.5	10.6	18.3
9. Textile yarn fabrics and manufactured articles	5.3	2.7	1.1
10. Non-metallic mineral manufactures . .	7.3	19.8	10.0
11. Iron and steel .	99.3	90.4	32.3
12. Metal manufactures . .	4.1	5.4	21.9
13. Machinery and transport equipment . .	111.7	178.5	106.9
14. Miscellaneous manufactured articles . .	4.1	4.7	18.0
15. Others . .	6.6	5.0	38.9
TOTAL EXPORTS	605.9	407.4	807.9

Table IV

India's Imports from Indonesia

(In million Rs.)

Items	1976-77	1977-78	1978-79
1. Spices . .	3.1	3.4	6.0
2. Crude vegetable materials . .	1.9	1.5	2.5
3. Fixed vegetable oils and fats .	21.1	24.2	24.5
4. Chemicals and related products	2.6	84.1	88.3
5. Other . .	0.1	117.5	3.5

There are some joint ventures with Indian traders and government bodies and many more are likely to come up in near future. Global tenders floated by the World Bank, the A.D.B. and other multilateral organi-

sations have attracted Indian investors to compete with the technologies and products of the industrially developed nations. Indian technology with its labour-intensive bias has been found to be appropriate for Indonesia. The India-ASEAN dialogue is likely to open up new channels of economic cooperation between India and ASEAN in general and between India and Indonesia in particular. There is likely to be a greater flow of Indian technology to ASEAN countries and Indonesia will also be a beneficiary.

Inflation rate in Indonesia has been moving up even as there is growth in national output. It reached 33.3 per cent in 1974. The Government's stabilisation pro gramme involving fiscal and monetary restraints an increased import supply reduced the rate of inflatio to 14.2 per cent during 1976. The Government i presently subsidising commercial imports of foodgrain sugar, fertiliser and insecticides. The problems c regional economic development, high population, lo productivity and local entrepreneurship are some whic Indonesia, like India, has to solve through planne efforts. The country faces great challenges on th economic front but it is steadily moving in the rig direction through optimising its natural resources an this holds promise for its future. □

Economic Consequences of Assam Agitation

Suresh Chopra*

THE year long agitation in Assam has been a costly one. Costly not only for the people of the state but also for the entire North Eastern Region and the country as a whole.

The biggest sufferers without doubt, have been the people of Asssam themselves. The man on the street has suddenly found that he has to go without many items of daily consumption which used to be freely available in the pre-agitation days. The one group that has suffered immensely are the students in the State. Because of the agitation they have all lost about a year of their educational pursuits.

Since the agitation began, the refineries at Digboi and Gauhati have faced intermittent closure while the other two at Bongaigaon and Baruani have remained closed since the beginning of this year. The consequences of the closure of these four refineries have been enormous not only for Assam but also for the entire country. In terms of money it is estimated that the country has been losing something like three crore rupees a day on account of picketing of the oil installations in Assam. Apart from this the closure of the refineries has resulted in a serious disruption in the supply of petroleum products in the areas normally fed by these four refineries. The total loss incurred till Octber from this disruption exceeds Rs. 700 crore. It is estimated that monthly loss in the production of diesel from these refineries is about 1,30,000 tonnes, and that of kerosene something like 30,000 tonnes.

With the closure of the refineries at Barauni and Bongaigaon, the supply of fuel and feedstoc to a number of fertiliser plants in the country came to a halt One by one the fertiliser plants at Sindri, Barauni, Nangal, and Kanpur have had to close down. Other plants at Gorakhpur, Phulpur, Bhatinda and Panipat have had to face partial closure. The non-availability of fertilisers to the farmers has resulted in crop damage in some measure. In Assam itself the functioning of the Namrup-I and Namrup-II fertiliser plants was seriously affected on account of the agitation. Namrup-II plant has had to face total closure due to non-availability of feed-stock. The continuing total loss per month on account of the agitation is estimated at 30,000 tonnes of nitrogen, valued at Rs. 13 crore rupees.

Due to non-functioning of these four refinerie the supply of furnace oil and light diesel oil to th power stations, in Assam and in neighbouring We Bengal, Bihar and the eastern part of Uttar Prade has ceased. This, in turn, resulted in reduced gener tion of power by these power stations. Load sheddi in a large measure has had to be resorted to in the States, which has further resulted in the loss industrial production It is difficult to calculate th loss in terms of money, but there is little doubt th the figure must be in crores of rupees.

Our steel plants, too, have not remained unaffe ed on account of the agitation in Assam. These r fineries used to supply products such as Low S phur Heavy Stock (LSHS) to a number of steel plan in the country. With the curtailment of such supp the production of steel has taken a nose dive.

Various schemes for laying of new railway lin in the north eastern region have had to be resch duled due to the agitation, with the target dat being put back by a year in most cases. The pro perity that would have accrued from these railw tracks has now been postponed. The loss of reven to the North-East Frontier Railway system due immobilisation of wagons has also been significa It is estimated the approximate loss in earnings the railways has been something like Rs. 25 cro till the end of September 1980.

Some major hydro-electric projects under exec tion in the North, Eastern Region have also be badly hit by the agitation. The Hindustan Pap Corporation Ltd. a public sector undertaking, currently engaged in the execution of three maj projects in Assam and Nagaland. As a result of t agitation in Assam the progress of these proje which would have given a boost to the economy this region, has been greatly impeded. Consequent the dates of commissioning of all these projects ha been delayed.

Other projects relating to the cement, salt, pl wood, glass and carbon, and the small scale industr sectors have also been affected. Apart from this, t movement of timber, bamboo, plywood and ju out of Assam has been disrupted further affecting economy of the state. □

*Special Correspondent All India Radio

A.I.

Jharia has ample coal to meet the nation's need for another 600 *years*

Coal Industry and Economy

Dr. V. P. Batra

COAL constitutes more than 50 per cent of the total commercial energy consumed in the country. Though coal production has remained constant during the last three years due to industrial recession of energy and a major source of commercial energy will continue to grow. Considerable expansion in the output of coal will be needed in the coming years and even in the very near future as the economy picks up.

Regular production of coal started in India after 1850. Working commenced at a number of places in Central India, in Singareni field and upper Assam, although attention continued to be focussed mainly on the Raniganj and Jharia coalfields. By 1900 total production of coal was 6.12 million tons. Out of this Raniganj was producing 2.55 million tons. With the development of railways the output of the Jharia coalfields grew rapidly. The years preceding World War-I saw the opening of coal mines in Bakaro, Pench Valley and Chanda Valley. By 1914 the total output of coal rose to 14 million tons per year. The period thereafter was one of continuous development. By 1945 the annual production rose to 29 million tons.

At the end of the Third Plan, the production of coal reached 68 million tonnes which satisfied all consumer requirements of coal. Rapid disealisation of railways, economy in the use of coal by various consuming sectors and the slowing down of the tempo of industrial development kept the demand for coal below the anticipated level. Coal production increased rapidly after nationalisation from 80.2 million tonnes in 1972-73 to 104.8 million tones in 1976-77. Thereafter it has remained somewhat constant at that level due to stagnant production and difficulties in moving the coal. Unfortunately over 15 million tonnes of the world's best quality coal is being devoured by

*Freelance writer

fire every year in the 325 square kilometre area of Jharia—India's premier source of coal supply. Not much has been done about it. It has been estimated that over Rs. 500 crore would be needed to put out the fire which is the resault of indiscriminate slaughter mining. So far the fire has turned into ashes over 400 million tonnes of coal which could have been enough to meet the country's coal demand for four years and equivalent to 25 years coal supply to the vital industries.

Coal constitutes more than 50 per cent of the total commercial energy in the country.

But despite this colossal loss, Jharia has ample coal to satisfy the nation for the next 600 years. Layers start from 25 feet below to all the way down to 3,000 feet.

Liquid Fuel from Coal

In the wake of Arab-Israeli War of October 1973 and the hike in the oil prices, the question of production of liquid energy fuels from coal has been revived and is receiving considerable attention. There are several proven process of production of liquid fuels from coals of different qualities.

A number of factors are responsible for the stagnation in coal output. The loss from optimum production levels has increased steadily. Power shortage and labour troubles are the main causes for the progressively increasing loss of output, especially in 1979-80. Law and order problems have also been a relatively important factor.

Due to acute power shortage, there has been a sharp fall in pithead stocks which came down from 13 million tonnes to 9.8 million tonnes in June 1978. In Coal India Limited (CIL) the shortage of explosives at the rate of 15 per cent per day had cost CIL in terms of production by about 2.2 million tonnes in the first quarter 1978-79. Moreover coal washeries suffer more than the coal mines due to power shortage. With the growing demand for coal in cement and fertilizer industry and the textile mills, the situation may become critical if timely steps are not taken.

Most of the problems of the coal industry are chronic and call for medium term solutions in terms of modernisation of old mines, implementation of new techniques of mining to exploit deposits that are less accessible, investment in washeries for benefication of coal etc. However, it is clear that substantial improvements in output will be obtained if adequate supplies of power could be ensured. Improved industrial relations in the collieries undoubtedly would have had a beneficial effect on output. Apart from improving the distribution system serious attention has to be paid to reduce the cost of production which is very high. The average coal miner in India leads a wretched life. In order to improve his lot and also to avoid undue strikes in the mines, the power of racketeers flourishing as trade unionists has to be curbed. There is a good deal of scope for affecting cost economies in the import of mining equipment and adopting appropriate mining technologies. With the reduction in the cost of production, we can find adequate funds for reinvestment.

It is heartening that the Coal India Limited has also adopted a number of features of the 20-Point Programme. Some of the major points adopted by the Coal India Limited are increase in production, discipline, participation of workers in the management, production of maximum spares by the workshops of the coal mines and the maximum use and security of the equipments of the mines, working for seven days a week, four overlapping shifts and welfare of the workers.

Coal India Limited is doing its best to implement various programmes in every mine under its jurisdiction. A coordinating system has been started in the mines and a Central Mines Planning and Designing Institute has been set up at Ranchi to plan the equipments and help maximum indigenous production of spares.

In 1978-79 India imported 1.2 million tonnes of coking coal. Though the present government accepted the proposals of Department of Steel for the import of 1.2 million tonnes in the current year, it decided to allow import of only 5 lakh tonnes at the moment due to dwindling foreign exchange reserves.

The government has earmarked a massive investment of Rs. 3,500 crore to be made in the 10 years in order to increase the amount of coal production to 260 million tonnes by 1990 from last year's 104 million tonnes. A working group on coal has observed that the demand for coal may touch 150 million tonnes by 1982-83. Recently new coal projects to produce 1.2 million tonnes of prime coking coal annually have been approved. Moreover the announcement of three schemes for the introduction of non-coking coal in steel making marks a new phase in the development of India's iron and steel industry.

The plan outlay for the current year has been raised from 1979-80 level of Rs. 276 crore to Rs. 380 crores As a part of the government's strategy to improve the distribution system and also to bring down the prices of coal, especially, soft coke, it has been decided to set up coal dumps in the six States of U.P., West Bengal, Haryana, Panjab, Tamil Nadu and Himachal

Most of the problems of the coal industry are chronic and call for medium term solutions like modernisation of old mines, implementation of new techniques of mining to exploit deposits that are less accessible, investment in washeries for beneficiation of coal etc

Pradesh. An important feature of the plan is that the Coal India Limited would operate these dumps excepting in cases where such dumps are already in existence and are being run by State governments themselves. To begin with, the dumps would provide soft coke and steam coal and other varieties, depending on the requirements of the States concerned. Moreover these dumps would step up the loading of coal as well as maintain the current supply as well. □

Financial Performance of State Electricity Boards

Dr. V. Nagaraja Naidu*

THE public enterprises in India have grown substantially during the era of planned development. These enterprises which were mostly confined to public utilities prior to Independence, now vary widely in their spheres of activity and are assuming a significant place in the national economy. The growth of public enterprises in the country has been accompanied by an increasing concern about their financial performance This is because many public enterprises, including the State Electricity Boards, have tended to be financially less successful than anticipated Their dependence on the Government subsidies and other forms of assistance led to deficits in the Government budget and aggravated tendencies toward deficit financing and inflation.

In terms of financial objectives, these Boards are required to generate a return of 9.5 per cent on capital base. . . .

The State Electricity Boards have been set up to undertake integrated development of power generation and its transmission and distribution in the country to meet its rising demand for economic development The electricity generation being capital intensive, the ability of the Boards to cater to the needs of fast increasing demand largely depends on the availability of finances. This in turn is conditioned, to a large extent by their ability to mobilise adequate internal resources by generation of net surpluses in operation.

Being public utility undertakings the SEBs have to operate in such a way as to realize specific financial goals and social welfare objectives In terms of financial objective these Boards are required to generate a return of 9.5 per cent on capital base The Boards have also guaranteed to the World Bank a return of 9½ per cent on capital base, while receiving assistance for their generation and transmission schemes.

Poor Peformance

A study of the financial performance of SEBs in the country, over the five year period from 1973-74 to 1977-78 shows that contrary to expectations majority of the Boards have been incurring continuous losses. The amounts of losses incurred by certain Boards have been very high and gradually rising over the period under study. For example, the losses of Uttar Pradesh Board rose from Rs. 30.01 crores in 1973-74 to a phenomenal amount of Rs. 74.00 crores by the end of 1977-78. The total losses of all the losing Boards combined together went up to Rs. 175.32 crores by 1977-78 as against Rs. 113.71 crores in 1973-74.

Department of Commerce, S.V. University Autonomous Post-Graduate Centre, Anantapur, A.P.

The continuous heavy losses of the Boards have undermined to a large extent, their investment capacity in relation to expansion programmes. Consequently the physical achievements of new generation capacity have been lagging behind the target since the First Five Year Plan. The shortfall in target capacity, which was to the tune of 15.38 per cent during the First Five Year Plan, increased to a record figure of 50.54 per cent by the Fourth Five Year Plan. The rising shortfalls in the target capacity hampered the growth of installed capacity. This in turn resulted in power shortages in the country.

Power Shortages

During periods of shortages restrictions of several types like cutting off of supplies and fixing of amount of electricity to be consumed by a customer have been imposed. The widening gap between the supply and demand for power has also resulted in the deterioration in the quality of supply of power and retarded the economy.

Because of their poor financial performance the SEBs have not only adversely affected the power development in the country but are also a drain on States' finances. Had the SEBs managed to realise the net surplus as stipulated by the Government of India and utilised it for capital investment, or transferred it to States' exchequers, they could have eased the States' Budgets and facilitated development activities.

This can be more clearly demonstrated by analysing the plan allocations of Andhra Pradesh. The power sector in the State has consistently been allocated lion's share of plan investments. The capital investment on this sector increased from 20.8 per cent during the Second Plan to 42.5 per cent during the Fourth Plan period and accounted for about 40 per cent in the Fifth Plan. As compared to this the investment on education during the Fifth Plan period accounted for 1.9 per cent. Hence, a 5 per cent cut in the capital investment on power would have helped divert funds for more than 100 per cent increase in the total outlay for education.

The total losses of all the losing Boards combined together went up to Rs. 175.32 crores by 1977-78 as against Rs. 113.71 crores in 1973-74.

Finance Commission's Warning

The Finance Commission of 1972, has rightly pointed out that "The poor working results of electricity Boards are reflected in the budgets of State Governments in the form of default, in full or in part, in

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payment of interest on loans advanced by State Governments. We feel strongly that unless some minimum returns are laid down in respect of investments made in power projects and are strictly enforced, the present drift will continue with serious consequence for the health of our economy".

Policy Issues

The importance of improving the financial performance of SEBs in the country is therefore of great significance to the States' finances and the development of the other spheres of economy. This can be achieved by greater operational efficiency to reduce the overall costs of supply of electricity and a rational tariff structure to ensure sufficient revenues to realise the net surplus stipulated by Government of India.

Preferential Tariffs

The State Governments, however, have often imposed restrictions on the tariffs of electricity supply for social and political considerations. It has been widely recognised that the SEBs should subsidise power consumption by a certain group of consumers on social considerations. They should extend subsidies to deserving people, the consumers of low income group, who cannot afford to pay the full cost and ensure their socio-economic uplift.

While the tariffs of all the categories of consumers have increased, the agricultural tariffs have been kept substantially low. The main categories that account for a big drain on revenues, because of substantial subsidised rates are farmers and new industries. When the concession is extended to all the agricultural consumers, agricultural consumers with large holdings also

The financial performance of SEBs in the country can be improved by greater operational efficiency to reduce the overall costs of supply of electricity and a rational tariff structure to ensure sufficient revenues to realise the net surplus stipulated by Government of India.

benefit along with marginal farmers fro mit and greatly weaken the financial stregth of the Boards, The new industrial units are given a rebate of 25 per cent for the first three years frem the commencement of commercial production. Given to attract enterpreneurs to set up industries in the State the subsidy is no better than direct subsidies given by the States.

It is not realistic to expect the SEBs to supply power at subsidised rates indiscriminately and at the same time generate sufficient net surpluses. A selective approach in extending the subsidies is therefore, necessary to improve the financial position of the Boards for further investment and transfer to States' exchequers for development in other sectors of the economy.

Prevention of Blindness

Dr. S. R. Malik*

SIGHT is the greatest gift of God to mankind. It not only enables us to appreciate nature but is also essential for the proper development of human personality. Loss of sight, therefore, is the greatest tragedy that can befall an individual. Shakespeare was right when he said "He that is stricken cannot forget the precious treasure of his eyesight lost".

India has a large number of curable and incurable blinds. There are about nine million people who are completely blind and about 45 million are visually handicapped eighty per cent of this blindness could have been prevented or cured if the Eye Health Care Services and Education on Eye Health Care could reach the remotest areas of the country. The important causes of blindness are cataract, trachoma and secondary infections, small pox, nutritional deficiencies, injuries and Glaucoma. Syphilis, Gonorrhoea, diabetes, hypertension, drug toxity and methyl alcohol poisoning are among the other important causes of blindness.

Smallpox which used to be an important cause of blindness has fortunately been eradicated from the country and no fresh cases have been reported on this count, Virulence of trachoma has also come down. Infections, are generally responsible for blindness in children. The virus and fungal infections which were quite rare some time back, have now become common, specially the herpes of the cornea. Nutritional deficiencies affecting the eyes are commonly seen in children. The deficiency of Vitamin A, coupled with Protein deficiency in diet leads to serious eye diseases known as Keratomalacia and Xerophithalmia, which, if not treated adequately and at a proper time may lead to a permanent loss of vision. Children who are suffering from diarrhoea and such other diseases need special supplement of Vitamin A and rich protein diet

The regular examination of children specially at the age of six months, three years, five years and seven years may save the child from becoming partially blind. Children who develop crossed eyes need urgent attention. Any delay in the treatment will affect functional cure of the eye. Some people believe that with age, the crossed eye will become all right which is not true. Children with crossed eyes not only suffer cosmetically but also the vision in the crossed eye becomes poor. The cosmetic and functional cure can be achieved if treatment is given adequately at an early stage. The cataract and glaucoma are the two important diseases which are responsible for diminution of vision. In cases of glaucoma, the vision which is lost cannot be recovered but in cases of cataract the vision can be restored after surgery. It is essential, to differentiate between these two conditions. Many patients who actually suffer from Glaucoma, believe that their vision has gone down because of cataract. It is a common belief in our country that cataract can only be operated when you cannot count fingers at close range. This notion is not correct. Many cases of

*Eye specialist, Ophthalmic Advisor to Delhi Administration

glaucoma come for relief at a time when the vision has been irreparably damaged and nothing must can be done. Some of the important symptoms of Glaucoma are seeing coloured circles around the lights, dull pain in the eyes, headache and frequent change of glasses for reading. Those who have such symptoms, should consult a qualified eye surgeon.

With fast industrialisation of the country and increase in agricultural activities, more people are prone to eye injuries. It is desirable that the protective method must be used in the industry to prevent injuries to the eye. After first aid, it is again desirable that such people are looked after by qualified people who are experts in handling such emergencies. Children should not be allowed to play with bow and arrow, crackers and other sharp pointed toys.

Sexually transmitted diseases specially syphilis, if not treated properly, can cause blindness in the offspring.

The diabetes is the most important cause of blindness in the West. If you are a diabetic, it is desirable to get a regular check-up of your eyes as debatic retinopathy may develop and if it is not treated at an early stage, may lead to irreparable damage to the retina. Photo coagulation is of great use in such cases if treated early. Hypertension can also lead to blindness if not adequately controlled.

In recent years, many reports have come in about liquor poisoning. The country liquor is often adulterated with methyl alcohol which is extremely harmful to the optic nerves and this could well lead to permanent blindness In some cases the methyl alcohol poisoning can cause even death.

Proper education and treatment can save a large number of people from becoming blind. It is very heartening to know that the Government of India had realised the gravity of the situation as far back as 1975 and at its meeting held in April of that year, the Central Council of Health made this observation : "One of the basic human rights is the right to see We have to ensure that no citizen goes blind needlessly.. or being blind does not remain so, if by reasonable deployment of skill and resources, his sight can be prevented from deteriorating, or if already restored". The Government of India a[illegible]tional programme for prevention of [illegible]ment and control of blindness in India in collaboration with Danish International Dev[illegible] Agency. The national programme aims at in[illegible]ing educational efforts on eye-health care thro[illegible] media of mass communication and extension education methods. It also aims at extending eye care services through mobile units to restore sight and relieve eye ailments by adopting an eye-camp approach and by establishing permanent facilities for eye health care as an integral part of general health services at different levels. These are, firstly, the peripheral level. Comprehensive eye-care services at peripheral level envisage deployment of 60 mobile units in eight years and devlopment of eye health care as an integral part of general health services. The mobile units provide comprehensive eye-health care to the people in remote rural areas. Then comes the intermediate level. Here two thousand sub-divisional hospitals and four hundred district hospitals provide the first line of specialised services at intermediate level. Under this programme, there has to be one eye-bed for 15,000 to 20,000 population in a phased manner. Finally, there is the central level. At this level, long term planning and evaluation, development of manpower, operational research in Ophthalmology and overall technical leadership are being provided through medical colleges, regional institutions. State eye hospitals and the national eye centre. The National Eye Centre takes care of preparing curricula, continuing education programme and development of health education material.

India has a tradition of voluntary action. The endeavour of the State is to encourage and strengthen the voluntary agencies so that State and voluntary efforts complement each other.

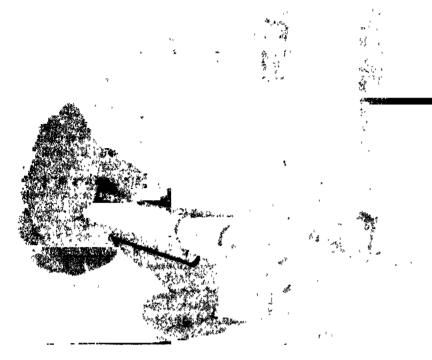
There are many difficulties in the implementation of the programme but we are hopeful that the programme will ultimately succeed and will enable millions of sightless people to see again. □

(All India Radio)

Strategy for Credit to Rural Poor

A five-point strategy proposed in the Sixth Plan to ensure adequate and smooth flow of institutional credit to the rural poor was outlined by Shri Narayan Datt Tiwari, Union Minister of Planning and Deputy Chairman of Planning Commission at a meeting of chairmen of nationalised banks and cooperative banks, representatives of some Central Ministries and State Governments, public sector units, and eminent rural development experts in New Delhi recently.

Shri Tiwari said that there had been in recent years considerable expansion of credit to the priority sector and especially to its main component—agriculture and allied activities—there have been serious imbalances and inequalities in the share of credit going to various groups within the sector. Agricultural labourers and artisans in particular, which constitute a large proportion of the rural poor, had hardly been touched by institutional credit. A strategy of credit reservation was, therefore, proposed for small and marginal farmers and for agricultural labourers as separate groups and for rural artisans it was proposed to set up a separate line of credit running down to the primary agricultural cooperative societies.

Shri Tiwari said that the third point of the strategy related to various measures to tone up and strengthen the credit delivery system. The fourth point was active credit planning for each member of the target group was proposed with the primary cooperative societies and the extension agency not only identifying members of the target group, but actively motivating and assisting them to avail of credit. The Minister said this approach had been described as "borrower chasing" and "saturation" banking. The fifth and last component of the strategy concerned the extension agency proper, and recognised that without revitalising and reorienting it the credit agencies themselves were likely to be severely handicapped. □

U.P. is a thriving centre for the production of cotton

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IT was only in the sixties that the leadership of Uttar Pradesh became concerned that their State was drifting backwards. The indicators adopted to judge the progress of the state in economic terms were titled against Uttar Pradesh with the exception that it had a high percentage of highly educated people and some of intense industrial activities. It was surprising because before Independence, Uttar Pradesh ranked quite high in industrial production. It was also thought to be highly fertile. In 1941 Census, Kanpur city with a population of ten lakhs ranked only next to Bombay, Calcutta, and Madras. It was a thriving centre for production of cotton textiles, woollens, jute and leather goods. Over 80 sugar mills provided 60 per cent of the total sugar production of the country. Even before this progress was made; Mr. Crooke of Bengal Civil Service wrote the following : "Of all the provinces of the Empire there is none of greater interest than this (U.P.) It is the veritable garden of India, with a soil of unrivalled fertility, for the most part protected from famine by a magnificent series of irrigation works, occupied by some of the finest and most industrious of races, possessing in its roads and railways an unusually perfect system of internal communications Within its borders or close to its western frontier was the earliest settlement of the Hindu race, and here its religion, laws and social polity were organised. Here Buddhism supplanted Brahmanism, only in its turn to succumb to the older faith . . ."

*Vetern Journalist.

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Rice fields in the terai region of Uttarkhand

Yet when the whole country was developing forward, Uttar Pradesh seemed to lag behind. The Third Five Year Plan Report (Volume I) published by the Government of Uttar Pradesh (Planning Department) emphasised : "...that Uttar Pradesh, as a whole, was far behind the all-India averages in the major indicators of progress and thus will be regarded as a backward State in the country", and urged for "a substantial step-up in the level of Plan outlay and Central assistance so that the gap between the levels of income and economic and social overheads between Uttar Pradesh and other progressive States in the country, might be reduced." In Chapter V of this Report, it has been stated that the State Government have been conscious of the special problems of selected areas within the State and realised that for uniform development of the State as a whole, these special problems should be recognised and remedial measures taken. The following is an extract from that Chapter :—

> "An attempt has been made to identify the problems of each of these regions and adjust the pattern of outlay to the needs of each area. To the extent possible weightage has been given to the backward pockets within Uttar Pradesh in determining the zonal allocations. For the purposes of planning, three broad areas have been recognised as having special problems, though there are some backward pockets in every divison and district. These three

backward areas are—(a) the Eastern districts, (b) Bundelkhand and (c) the hill district. Report of Joint Study Team, Uttar Pradesh (Eastern districts) Planning Commission Jan., 1969, P 35.]

The question arises, why was it so ? According to the Report of the Joint Study Team set up by the Planning Commission to examine the conditions of "Ghazipur, Azamgarh, Deoria and Jaunpur" The State as a whole is backward relative to other States in the country and the Plan allocations during the Five Year Plan period in Uttar Pradesh have been conspicously smaller than that in the country as a whole. The per capita outlay in the Second Five Year Plan was only Rs. 33.7 in Uttar Pradesh against Rs. 51 for all States. The per capita outlay in the four districts in the Second Plan was only Rs. 26.5. The question may be asked whether it was possible to achieve a higher per capita outlay in these districts. This in turn would depend upon (i) whether it was possible for the State Government to allocate a higher proportion of Plan outlay in these areas; and (ii) Whether, considering the totality of circumstances obtaining during this period, it would have been possible to utilise a larger outlay."

The Uttar Pradesh Government entrusted the work of Techno-Economic Survey of the State to the National Council of Applied Economic Research. Its report was published on April 1965. It is stated on its flap : "The State of Uttar Pradesh, comprising the famous Himalayan range and the Gangetic Valley, has been a great influence on the Indian nation. Its size, strategic position and its population strength have all contributed to this. Yet it is a stark economic fact that this State is one of the poorest in the country. In essence, Uttar Pradesh shows up in an acute form all the varied problems of under-development in the country : Its agriculture is depressed, its industrial base is meagre, its unemployment and under-employment critical."

Why it was so and why suddenly Uttar Pradesh dropped to this position, the survey went on to report : "Uttar Pradesh remains a relatively less developed State of India, although the resource potential is relatively large compared to other backward States.

It is surprising that Uttar Pradesh which before Independence ranked quite high in industrial production should be drifting backwards.

During the last decade, while the per capita national income showed a rise of 19.2 per cent, per capita income in Uttar Pradesh increased by only 6.2 per cent. In 1950-51 per capita income in Uttar Pradesh was Rs. 281 which rose to Rs. 298 in 1960-61. Uttar Pradesh ranks second in regard to the magnitude of the Government revenue and expenditure. But in per capital terms the State tax receipts and expenditure are low, when compared to the average of the States in the Indian Union. Uttar Pradesh occupied the tenth position (Rs. 16.55) among the States in regard to per capita total revenue and also in regard to per capita revenue from State taxes (Rs. 7.41) in 1959-60. The per capita revenue from State taxes and per capita total revenue for all States in 1959-60 are Rs. 10.06 and Rs. 22.91 respectively. Per capita grants to Uttar Pradesh from the Centre for that year work out 8.4 per cent as against 15 per cent for all States. These figures indicate that the tax revenue of the State as well as Central grants form a smaller proportion of total revenue than the average for all States."

The allocations from the Centre for both the Plan-periods were very small compared to all India. Why the State revenue fell and why it was denied increased Central assistance so that necessary funds could be provided for its development, should be examined.

Abolition of Zamindari and Bhomidhar resulted in reducing the land revenue, the mainstay of UP's revenue.

Reasons for Slide-back

Just after Independence Uttar Pradesh undertook three major national programmes of the Congress and all of them resulted in the demuinition of revenues. It was the first to abolish Zamindari, and the institution of Bhoomidhar, immediately resulted in reducing the land revenue which was the mainstay (half) of Uttar Pradesh's revenue. Besides, the Uttar Pradesh Government took up the responsibility to compensate a large number of Zamindars in bonds which are being paid every year. Then again this State was a pioneer in extending prohibition to different districts, specially the opulent ones, with the result that there was a drastic cut in the excise revenue. As early as 1957 Uttar Pradesh suggested to the Finance Commission that population should be the criterion for allocation of States' share in Central revenues. The Finance Commission which did not accept this, only increased the number of duties to be shared, and duties on sugar, tea, coffee, paper and vegetable non-essential oils were also joined to the State pool, but the amount was reduced by 25 per cent. With the result that a large State like Uttar Pradesh got only 15.94 per cent of the central excise duties and 16.36 per cent of income tax. While U.P. had to meet Rs. 93 crore it was asked to raise Rs. 43 crores, highest in all States, but it was given a central grant of only Rs. 36 crores. On the other hand States like former Bombay received Rs. 44 crores, Bihar Rs. 28 crore, Madhya Pradesh Rs. 26 crore and West Bengal Rs. 25 crore. When this Commission considered the needs of individual States it put forth that Uttar Pradesh was equal to Bombay and the then Madras State and said that no grant-in-aid was necesssary for these States, while for other States grants amounting Rs. 187.75 crore were sanctioned.

Uttar Pradesh has continuously been asking that the division of central revenues to States should be on the basis of population but States with metropolitan cities like Bombay and Calcutta where registered offices of most of the companies are situated, succeeded in persuading Finance Commissions that the basis for division should be the place of collection. Registered offices of many industrial units and bulk of the trading units of all-India character are situated at port towns and even if the bulk of collections is from inland transaction their income is credited to the State where the registered office of the company is

situated. This has resulted in great loss to the economy of Uttar Pradesh. Even the Gadgil Formula of division of income of Central pool did not do justice to heavily populated States like Uttar Pradesh. The Finance Commission provided weightage to the States that were formerly under princely domain and they were given various forms of assistance in lieu of certain assets like railways. The Uttar Pradesh implemented at a huge cost the two policies of the Central Government namely, Zamindari abolition and prohibition but no consideration was given to make up the lost revenues, and the net revenue available for Uttar Pradesh for its development was low.

In case of States with metropolitan cities like Bombay and Calcutta, U.P. could not succeeded in persuading Finance Commission that the basis for diversion of central revenues should be the place of collection

Uttar Pradesh was one of the States which followed Mahatma Gandhi's whishes to make the mother tongue the medium of instruction. with the result, while in earlier period graduates of single University like Allahabad had chances to rise up in ICS and other examinations, the proportion of UP students occupying Central Service and Central Government Undertakings and private commercial organisations outside the state decreased and the invisible income of UP also went down

Large Size

Apart from these three factors which deflated the income of Uttar Pradesh there were certain inherent defects in the internal set-up and economy. The State is very large in area and overheads are high. The largeness poses two problems : neither the Government nor the administrative machinery is able to take an overall view of the State. What seems to be good for western Uttar Pradesh will not work in eastern Uttar Pradesh. The problems of hill districts of Uttarakhand are totally different from the hill districts of Bundelkhand. Their priorities are different, their characteristics, are different. An officer from one area needs time to understand the people he is supposed to serve and any fine morning any MLA can get him transferred to a far-off area. Therefore the bulk of the officers and ministers are busy either in transferring people or reversing transfer orders. Even if nothing else happens this transaction results in lethargy, corruption, favouritism, frustration and inertia. Shri K M. Panikkar advocated the division of Uttar Pradesh at the time of State Reorganisation and now many others who were not convinced of his arguments at that time and who have witnessed the subsequent progress of Haryana and Punjab have been converted to this view. It has been increasingly difficult to have a leadership which may have a hold over whole of Uttar Pradesh or which may size up the problems of the State as a whole.

Even as early as 1965 the Techno-Economic Survey of Uttar Pradesh said : "The delays at the Centre in allocating foreign exchange, according sanction to schemes and making available building materials are responsible to certain extent for the shortfall. The non-availability of foreign exchange in time affected the schemes, particularly in the fields of irrigation, power and industry causing their delayed execution. The Central Ministries took too long to sanction schemes to be executed in a particular year with the result that funds remained unutilised in the year. This was specially true in the first two years of the Second Plan. Construction programmes in several fields were held up because the building materials were not available.

At the level of the State Government also there were serious lacunae in planning, execution of schemes and coordination. The various departments of the Government view the plan schemes as items of expenditure to be incurred during a particular year and do not realize their importance in the context of the overall developmental Plan. The result is that there is no integration of the schemes executed over years and among various departments. The full details of the schemes and their phasing are not properly worked out. There is a tendency to speed up the expenditure at the close of the financial year with the result that there is delay and waste. Deficiencies in the supply of technical personnel were experienced in agricultural and vaterinary services, medical and public health, and for civil and electrical engineering. In social services, the short-fall occurred due to delays in construction of buildings which formed a large proportion of expenditure in this sector "

Solution

In conclusion, a political solution will have to be found for the management of such a large State. This is the base. Secondly, the centre and its officers have

It is absolutely necessary that this land which has made allround progress on several fronts should be made attractive for those people who have migrated to other States to return.

to adopt a more favourable concern for this State in the matter of grants, more allocation and greater priority for the development of backward areas. If the unemployment problem of Uttar Pradesh could be solved it will generate production, increase the purchasing power of the people and provide funds for either national savings schemes or in primary and secondary activities of production Uttar Pradesh has also suffered because its hard-working persons, finding no avenues for employment, have gone to other States. The political climate is taking such a shape that some of them may prefer to return. It is, therefore, absolutely necessary that this fertile land, which has progressed very much during the last decade in agricultural production and village industries, specially handloom industry, should be made attractive for these people to return. That will infuse a driving force for development. If Uttar Pradesh develops, the gross national product will go up, there will be a higher rate of growth and a higher per capita income boosting the economy of the country as a whole. ☐

Pricing Policy of Public Enterprises

Subhash J. Rele*

THE losses of public sector enterprises are interpreted in different ways. The heavy losses incurred by some provide striking evidence of the way in which enterprises are being pushed into the red by the Government's pricing policy. Extra-commercial considerations influence the determination of prices in public sector enterprises. Sometimes public sector enterprises may conduct their operations not with a view to recovering their costs, but to promote general welfare. The debate is currently raging the country stressing the need for public sector to generate larger surpluses by earning higher profits. In this context, the pricing policy in the public sector assumes relevance.

Economic Price

One widely held view is that public sector enterprises should charge an economic price. What is economic price ? It means that conceptually the price should cover allowances for replacement, expansion, maintenance and capital formation besides the cost of production and normal profit. Pricing must be related to costs and should be fixed in such a way that they yield revenue.

Indeed, the Government itself, is responsible for increasing the costs by way of fresh duties and higher interest rates.

It is admitted that public sector pricing often remains fixed at depressed level despite rising input costs The main reason for the poor performance of such enterprises as Coal India, Hindustan Antibiotics, Indian Petrochemical etc., is the unrealistic pricing policy which has been foisted by the Government. For example, coal prices at the pit head have gone up by only 80 to 90 per cent since nationalisation though the wages of labour force more than trebled. Indeed, the Government itself is responsible for increasing the costs by way of fresh duties and higher interest rates.

Variations

There is a considerable variation in the pricing policies pursued by different public enterprises in India. The selling price and distribution of products like fertilisers, drugs, coal and petroleum are controlled or regulated by Government. In the case of products which have to face competition in foreign markets pricing is done on the basis of the prevailing international prices. There are some public sector enterprises like the Hindustan Cables and Bharat Electronics Ltd. whose products are almost entirely bought by the Central or State Governments or public corporations.

The enterprises which operate under competi conditions generally produce consumer goods. S enterprises should fix prices of their products with objective of maximising profits. In the initial sta in case of some industries, the prices may have to fixed at a low level with a view to encourage dem and to widen market in the long run. In such ca subsidies may be necessary, but they should be all ed for a specified period.

Marginal Cost Theory

The marginal cost of production theory holds t the prices should be based on the basis of marg cost of production which would ensure an optim output and maximum utilisation of all factors of p duction. The principle implies adjustment at the mai and thus ensures rational allocation of resources. sources continue to flow into a particular sector u the marginal cost of producing an additional unit output is equal to its demand price.

The marginal cost cannot be accurately asses because the factors are indivisible and the vari charges like new factor intakes are not the charges factor-use needed for additional increments of outp Marginal costs would be high at points where capa gets exhausted and for additional production r capacities have to be created. In such cases the co incurred at such points are abnormally high and marginal cost cannot be the basic for price fixation. the price is equal to marginal cost, fluctuations in mand and supply would lead to frequent fluctuati in prices which is not very desirable. The fixation prices at a level insufficient to cover costs may l to inefficiency in management. It will also incre the need for widening the supervisory powers of controlling authorities which would result in curtail the freedom of management In several fields the m ginal cost may be negligible or zero

'No Profit No Loss' Theory

The advocates of 'no profit no loss' theory arg that the Government should make no profit and foll a policy of no profit no loss. The traditional view that public enterprises are meant to serve the peo and not make profits. They should distinguish the selves from private enterprises by promoting public purpose.

It is now widely believed that public enterprises m make profits and "no profit no loss" principle is consistent with a socialist economy.

Some proponents argue that a great advantage the public ownership would be the freeing of industries from the tyranny of the profit and l account. It is forgotten that a policy of losses wo contribute towards inflation unless it is deliberately off in some other manner. Secondly, if a public corpo tion has to consistently operate at a loss, additio

(Contd. on page 2

Industrial Safety

R. B. L. Garg*

INDUSTRIALISATION has brought in its wake several problems. One of the the major problems among them is that of industrial accidents. With rapid advances in the industrial processes not only is the number of industrial accidents mounting but newer types of dangerss to life, limbs and health are also rapidly coming up. Innumerable mechanical, electrical, chemical, environmental and radiation hazards now pose threat to workers' lives.

Accident Rate

The accident rate in Indian industry is reported to have shot up from 30 to 60 per 1000 workers in the past three decades. It is far above the existing accident rates in the United States (23.72 per thousand) and the U.K. (38.80 per thousand). Statistics released by the Union Ministry of Labour recently reveal that about 600 workers die and 2.5 lakh are crippled or disabled every year in industrial accidents in this country. These accidents mean a social and economic loss of great magnitude with adverse effect on the economy of the country.

The accident rate in India of industry is reported to have shot up from 30 to 60 per 1000 workers in the past three decades.

Causes of Accidents

There are several causess of industrial accidents. The major accidents take place because of unsafe. actions of persons or unsafe physical or mechanical conditions (unsafe work environment) or both. Unsafe mechanical|physical conditions are either due to unguarded or inadequately guarded, equipment faulty design of equipment, hazardous processes, unsafe illumination, inadequate ventilation, unsafe dress or apparel and unsafe methods, processes, planning and defective conditions such as rough, sharp slippery place of work. Accidents are not acts of 'God' but result from the acts of ommission or commission of man or attitude of employers, employees and the government. The most unfortunate aspect of accident in Indian industries is that while in most cases the employers in the organised sector comply with the letter of law, the workers who in most cases are illiterate are hardly safety conscious. The employers in the unorganised sector, however, have no legal binding to use safety measures.

The accidents are not confined to any particular size of industrial unit or in a particular sector. They occur in big and small industries both in the public and private sectors and range from occupational diseases to fatal injuries caused by mishandling of a machine or mechanical failure. According to an estimate nearly 20 per cent of the 1.6 million textile workers in India are victims of byssinosis—a disabling respiratory disorder caused by inhalation of cotton dust. The toxic vapours and mists emitted by the dyes and chemicals widely used in textile mills and thermal stress due to over-exposure to heat and humidity are also hazardous to the health of workers. The noise of looms and other machinery impairs the hearing ability of the workers. While no specific study has been made to assess the ill-effects of noise in the textile industry, according to a recent study made by Prof. S. Kameshwaram (an eminent ENT specialist and the Director of the Institute of Oto-Rhino-Laryngology, Madras) noise level in several industries in India was far above the acceptable limits. The findings show that the industries in which noise pollution was most hazardous include textile, textool, automobile, oil mills, fertilizers and chemicals As a result nearly 21 per cent of the working population of industries was found to be suffering from noise-induced hearing disability. Nearly one-third of the workers in oil industries and about one-fourth of them in the textool industries were found tohave suffered from hearing disability.

Safety in Mines

Safety in mines is a comprehensive subject. It involves scientific exploitation of minerals so that 'eco' system is not upset and resources are properly conserved. It caters to the safety and health of workers engaged in mining. This concept has developed substantially in many new areas and in all countries engaged in mining. In the UK it has been possible to achieve the desired results and fatal accidents have been the lowest there during the past decade. In India the death rate due to such accidents has also dropped.

Employers' Apathy

According to a recent study a large number of employers don't provide occupational health care. In a random survey of the Chemical industry it was found that 47 per cent of the factories lacked proper first aid arrangements, 30 per cent of them had no medical room and 73 per cent had not instituted any periodic health check-ups for their employees. The situation in the small and medium industries is equally deplorable.

According to a recent study a large number of employers don'e provide occupational health care.

Labour Laws

Labour laws concerning accidents can be grouped under three main heads : Preventive measures, reporting measures and relief measures. The bulk of preventive measures may be found under the Factories Act 1948. Chapter IV of the Act deals specifically with the preventive provisions which cast an absolute

*Lecturer, Post-Gradutae Department of Business' Administration M.S.J. College, Bharatpur.

liability on the employers to comply with safety provisions irrespective of the considerations of practicability. For instance, where any machine is prescribed as dangerous for young persons (a person who is either below 15 years or an adolescent), no young person shall work unless (a) he has been fully instructed as to the dangers arising in connection with the machine and precautions to be observed; and (b) he has received sufficient training in work at the machine or is under adequate supervision of a person with thorough knowledge and experience of the machine. There are also other provisions to protect the workers e.g. fencing of machinery, restriction regarding work on or near machinery in motion, prohibition for young

They (accidents) occur in big and small industries both in the public and private sectors and range from occupational diseases to total injuries caused by mishandling of a machine or machanical failure.

and women workers, prohibition of employment of women and children near cotton openers, provisions regarding maintenance of lifts and hoists etc.

Reporting measures include the steps to be taken regarding reporting to the specified authorities once the accident has taken place. For example, under section 88 of the Factories Act, every fatal accident or the one which causes any bodily injury by reason of which the person injured is prevented from working for a period of 48 hours or more immediately following the accident, the manager of the of the factory shall send notice thereof to the specified authorities. Fatal accidents must be reported to the nearest station and the district authorities.

Relief measure include the various benefits available to the injured person or his dependents. If a personal injury is caused to a workman by accident arising out of and in the course of employment the employer shall be liable to pay compensation according to the provisions of Workmen's Compensation Act, 1923. Employers whose establishments are covered by the Employees' State Insurance Act have no additional liability for the payment of compensation. The court will settle the quantum of compensation if injured or deceased employee is not covered by any of the Acts.

All laws are good as they aim at protecting the weak and innocent against exploitation and hazards but no law can give back the life of the deceased to its dependents. Attempts should, therefore be made to prevent accidents as far as possible so as to llimit loss of life and limbs to the barest minimum. Industrial safety is an absolute necessity in a country like India where neither the machinery nor the labour is very sophisticated. □

Pricing Policy of Public Enterprises

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taxation would be necessary to recover this loss, the adverse effects of which may far outweigh the benefits likely to flow from operating at a loss. Thirdly, if costs are not covered and the product is sold at a loss, there might be an over-expansion of the industry concerned. It is now widely believed that public enterprises must make profits and "no profit no loss" principle is inconsistent with a socialist economy. The Taxation Enquiry Commission observed : "Public purpose rather than the profit should be the guiding factor in the operation of the public sector undertakings but the antithesis is more apparent than real".

"Average Cost" Theory

The advocates of the average cost of production theory assert that the public enterprises are expected primarily to meet needs, that is to provide an optimum volume of supplies cheaply without seeking profit. Every purchaser pays the entire cost of the unit or units consumed by him instead of paying only the additional cost of producing these units.

The theory, however, suffers from a number of drawbacks. From the macro-economic point of view, the determination of average cost is not as easy as it appears from the purely accounting point of view. The average cost pricing may result in excess capacity or undue restriction of investment where potentialities exist. It is not sufficiently flexible to accommodate price adjustments. It does not provide incentives for the managers of the public enterprises to reduce costs.

Profits Predominate

Profit is essential in a developing economy which has embarked upon rapid economic development. In view of the diverse objectives sought in the setting up of public sector enterprises the degree of essentiality of their products, the nature of the service provided by them, the size of their market, the class of their consumers, and their paying capacity, it is not possible to lay down any principle of pricing which will be uniformly applicable to all public enterprises. The broad consensus is that the pricing policy should be such that the public sector as a whole performs a crucial role in accelerating economic development. It is not possible to recommend one single formula which may govern the pricing policies of all products of all public enterprises under all situations.

Flexibility in Pricing

The pricing policy should, however, not only fill physical gaps in the output of goods and services but also contribute to national savings commensurate with the size of the enterprise. The pricing policy should be flexible eonugh to accommodate the changing competitive needs of the economic environment while consistently ensuring that the objectives are met. The concept of the reasonable price sets a norm which public sector enterprises must keep in view in the process of price fixing.

A thorough revision of the pricing policy is long over due. The right course would be to abandon both every price fixation and the "landed cost" formula and to ask every enterprise to set its own prices at such levels as will enable it to break even at an optimum utilisation of its installed capacity. Profit is essential if the enterprises are to self-finance their expansion and modernisation. Pricing policy must be formulated with the objective of helping the public enterprises provide the community with products and services competitive in prices and quality and bring about higher efficiency.

Under-Utilisation of existing Assets

Dr. R. P. Verma*

ALL our efforts are directed towards nation-building activity for a bright future. For all round development, we are installing new steel plants, new fertilizer factories, new power stations, extending mining activisities, irrigation facilities and so on. But equally serious efforts on national level to maximum the use of existing assets which have been created in the form of large plants, railway system, road transport, mining capacity, cement plant etc. have never been made.

Some of the important industries where under-utilisation is damaging national economy, are explained below.

Termal Power Plants

The installed capacity of thermal power plants of the public utilities is a little above 15,000 MW. At present, rates of investment are Rs. 6,000 to Rs 7,500 crores. Not only a huge thermal capacity is being put to a low utilisation but the utilisation is falling year after year. Since 1976 the highest capacity utilisation was little less than 49 per cent (in 1977), which went down to 46 per cent in 1978 and 43 per cent during the first nine months of 1979 Even during these nine months there had been almost a consistent fall in capacity utilisation, month after month till it touched 39.7 per cent in August 1979. If the utilisation level can be raised to just 5000 hours per year, out of 8760 hours this will mean that 33 per cent additional power will be available without extra capital investment. In terms of installed capacity, this could mean 2100 MW resulting in a saving of more than Rs. 800 crores on a conservative estimate, which is more than the total tax efforts of 1979-80 budget.

Railways

Indian Railway is the largest public sector set up in India. Its total assets exceed Rs. 5,000 crores and has an annual revenue of Rs. 2,500 crores.

Though during the last 20 years or so its freight traffic has almost doubled and passenger traffic has increased by more than 2.5 times, the rate of growth has shown a definite downward trend during 1977-78. The Railway carried 211 million tonnes of revenue earning traffic and this came down to 199 million tonnes in 1978-79. In 1979-80, against a target of 222 million tonnes, later revised to 205 million tonnes, railways are not likely to carry more than 194 million tonnes of revenue earning traffic. Coal is an important traffic for Railway. Presently this constitutes more than one-third of the total originating tonnage on the Railway system, but during April-December 1979 Railway could load on an average only 8664 wagons against 9250 wagons in corresponding period of 1978. Naturally nobody can claim that during this period Railway's capacity has reduced, as such it only means reduced utilisation of existing capacity.

Due to decreasing utilisation of existing railway facilities, the road transport has to carry larger burden of the freight traffic. During recent years this trend is strongly marked in respect of coal. In 1976-77, railways moved 77 per cent of the coal and coal products of Coal India Ltd., and the share of the road transport in it was little more than 16 per cent. In 1978-79 figures for Railways went down to 71 per cent and for road this increased to 22 per cent.

The under utilisation of railway capacity is a burden which a country like India cannot afford in view of much higher quantum of diesel consumption for road transportation.

Road Transport

"The average distance covered by a truck in a day in India is ridiculously low, as compared with the performance of a truck in other countries. This is largely because of bad and narrow roads and unnecessary impediments on the road. For instance, 50 to 80 per cent of a truck's journey time is wasted in waiting at octroi and other check posts."

A loss of just 10 per cent of time at octroi check posts means that out of about 4,00,000 trucks on the Indian roads about 40,000 are not being used and at the present price of Rs. 1.50 lakhs or so per truck, the value of 40,000 trucks i.e. a sum of Rs. 600 crores of capital is blocked in waiting for clearance at octroi check posts alone.

Cement and Paper

Situation in respect of capacity utilisation of Cement Industry is equally disappointing. Utilisation came down to 71 per cent in 1974-75 from over 94 per cent in 1955-56. Fortunately after reaching this low level industry has started looking up and reached a level more than 80 per cent in 1977-78, but is still far below the level achieved in 1974-75, as a result country has to import large quantities of cement.

There has been a dramatic fall in the capacity utilisation of paper and board industry. The utilisation was 99 per cent in 1970 and has shown almost consistent fall during the last eight years.

Other Industries

The capacity utilisation in aluminium industry was 92 per cent in 1970 and it came down to 63 per cent in 1978. With regard to vanaspati production, it was 50 per cent in 1978 against 64 per cent in 1970. Capacity utilisation fell down in respect of production of commercial vehicles also from 65 per cent against 96 per cent in 1970.

To meet the increasing demand of Indian industries and agriculture, immediate attention for better utilisation of capacities is needed. Since the main problem is the human factor, there will not be simple

*Dept. of Commerce, and Business Management, Ranchi University.

Rubber Research in India

T. K. N. Nair*

THE Rubber Research Institute of India—the Research Department of the Rubber Board—has completed 25 years of useful service to the indutry in the country. The Institute established under the Rubber Board in 1955 is engaged in evolving technology best suited and appropriate under Indian conditions for increasing natural rubber production and improving its productivity.

The broad lines of research work undertaken by the Institute are : (i) Study of the rubber tree, its improvement and all related problems, (ii) Study and classification of rubber growing soils and investigations on nutritional and cultural problems under varying conditions, (iii) Studies on the problem of diseases and pests and their control, (iv) Study of the physiological metabolism leading to rubber synthesis and techniques of exploitation and (v) Studies on rubber latex, its processing into marketable forms and types and conversion into rubber products.

The Rubber Research Institute of India celebrated its Silver Jubilee from November 23 to 28, 1980. One of the highlights of the celebrations was an International Rubber Conference.

The Institute located at Kottayam, the headquarters of the Rubber Board, has two experiment stations, one at its Headquarters and the other at Chethackal, 50 km away. The Institute has also a Regional Research Centre at Agartala (Tripura). Besides, the Institute has a Library and Documentation Centre.

The Institute provides advisory assistance on all aspects of rubber culture and product manufacture by visits, on the spot study of problems, detailed investigations and through correspondence. Short-term training courses and refresher courses are also arranged. The Institute is actively collaborating with the Cochin University in conducting a post graduate B. Tech. course in Polymer Science and Rubber Technology and with the Kerala Agricultural University in conducting a post-graduate diploma course in Rubber Production.

Outstanding Achievement

The Institute has brought out the importance of discriminatory usage of fertilisers for rubber, based on extensive field and laboratory investigations. The Mobile Soil and Tissue testing laboratory of the Institute offers on-the-spot discriminatory fertiliser recommendations to the small growers free of charge.

* Senior Correspondent Yojana, Trivandrum

One of the outstanding achievements of the Institute is that it had evolved and released clones with high production potential. These were highly appreciated by the rubber growers. RRII-105, RRII-118, RRII-203 and RRII-208 are the four main varieties. Of these, clone RRII-105 is a very high yielder, with production potential of above 3000 kg rubber per hectare per annum. These four clones are registered with the International Registration Authority. Planning materials of promise have been introduced from different rubber growing countries and suitable ones released for planting.

The Institute has developed effective control measures for all diseases and pests of rubber. Efforts are also in progress to reduce the cost of disease and pest control. By introducing indigenously processed 70 USR oil for spraying rubber trees against abnormal leaf fall disease, considerable foreign exchange could be saved by stopping import of spray oil. Micron sprayer and sprayer-cum-duster were introduced for disease control measures, specially among small growers.

Indigenous Machinery

The Institute has developed indigenous machinery for production of technically specified rubber. Assistance is now provided to processors in production of ISIcertified quality concentrated latex and solid block rubber. The Institute provides training to rubber goods manufacturers in the use of latest technological developments. Use of rubber in applications like road surfacing and bridge bearing is being popularised. Developed know-how for the production of articles like rubber components is being used in missiles (defence purpose), transport, bottle caps, foam backed carpets and rubber floor tiles. For reducing cost of processing in rubber goods manufacture, new forms of rubber like controlled viscosity rubber, rubber carbon black masterbatches and oil extended natural rubber were developed and are being popularised among major consumers of rubber.

The Institute has also realised the possibility of expanding rubber cultivation in the non-traditional areas like North-Eastern States and Konkan Region in the West Coast and it has initiated need-based research to solve problems in some of the locations.

With many achievements to the credit within a short span of 25 years of its existence, the Rubber Research Institute of India is now engaged in a variety of new projects and programmes to serve the rubber industry in the country. ☐

STEP BY STEP

International Award for BHEL

INTERNATIONAL Gold Mercury Award for peace and co-operation, for the year 1980 has been awarded to Hardwar unit of Bharat Heavy Electricals Limited. The other Indian organisation to receive the award is Bhilai Steel Plant. These awards are being given every year to individual persons and organisations for their contribution towards peace and international co-operation.

At an impressive function organised by Gold Mercury International Award Committee in Moscow recently Shri T. V. Balakrishnan, Executive Director of BHEL who is the first Chief Engineer of Hardwar Plant received the trophy on behalf of BHEL while Shri Budhwar, Minister (Economic), Embassy of India in Moscow received the award for Bhilai Steel Plant.

A Step Towards Self-Reliance

BHEL Control Equipment Division at Bangalore has achieved yet another land mark by successfully manufacturing and testing Static Excitation Equipment for 25 MVAR synchronous Condensor. It is the first time that such an equipment has been designed and manufactured in India. It is meant for export to Ghana along with Synchoronous Condensor from Hyderabad Division. This marks another significant step towards self-reliance in design and manufacturing of equipment for power generation and distribution.

Indian Scientist Wins Australian Medal

DR. P. S. SIDHU, Assistant Professor (Soils) of the Punjab Agricultural University has won the 'Australian Society of Soil Science Publication Medal' for the year 1979. This Medal has been awarded to him in recognition of his outstanding research work on mineralogy of Punjab soils which involved the use of X-ray diffraction and electron-optical techniques. Dr. Sidhu carried out this research when he was a Ph.D. Student at the University of Western Australia, Perth (Australia). Dr. Sidhu is the first overseas researcher to get this Medal.

Ten Per Cent Growth Rate of HMT

THE HMT produced goods worth Rs. 18.25 crore and earned a profit of Rs. 23.78 crores during last year. The public sector undertaking achieved a growth rate of 10 per cent.

As in the past, all units made profits last year. The lamps and lamp making machinery division at Hyderabad even within three years of its starting sold goods worth Rs. 8.45 crore—a growth of 34 per cent over the previous year. Watches worth Rs. 270 crore were sold last year.

'RITES' Marches Ahead

RAIL India Technical and Economic Services, a public sector undertaking under the Ministry of Railways has made significant headway in the field of consultancy. During the short span of its existence it has won a number of contracts in developing countries, namely Iraq, Nigeria, Ghana, the Phillippinis, Jordan and Zambia.

The turnover, net profit and foreign exchange earnings of the RITES in 1979-80 were to the tune of Rs. 8.7 crore, Rs. 2.46 crores and Rs 2.13 crores respectively as compared to Rs. 2.62 crores, Rs. 0.55 crores and Rs. 76,000 in the previous year. It has declared a dividend of 25 per cent for the year 1979-80.

White Revolution in U.P.

MILK production in U.P. increased to 5.68 million tonnes in 1979-80 from 4.1 million tonnes in 1960-61. At that time the average availability of milk was only 4.5 oz per head a day-perhaps the lowest per capita consumption of milk in the whole world. While the increase in population during the period was 49 per cent, milk production increased only by 39 per cent

To make available 10 oz of milk a day to the people, as recommended by the Nutritional Advisory Committee of the Indian Council of Medical Research, the production of milk has to be increased by at least three times the present level.

Dairies under the cooperative sector were started in 1938 by establishing a cooperative milk union at Lucknow. Between 1950-51 and 1978-80, over Rs. 18.19 crores have been spent on dairy development programmes. There are now 26 milk processing units in the State with an installed capacity of 524,000 litres a day. Besides these, there are four big private sector plants : Glaxo at Aligarh, Hindustan Levers Limited at Etah : Indodan Milk Production at Muzaffarnagar and Foremost Dairy at Saharanpur with an average handling capacity of 400,000 litres a day. Thus the total capacity of private and cooperative sector is 924,000 litres a day.

Most of these cooperative societies are in bad shape.

The 1980-81 plan has been structured on the basis of a new srategy to ensure availability of 225,000 litres of milk a day to the processing units from about 1,500 societies proposed to be taken up for intensive development.

The various programmes for supplementing the milk production as well as for providing additional resources to the dairies include the setting up of a Miltone Plant at Kanpur and development of tribal areas around Dehra Dun to encourage rearing of milch cattle.

Jobless Youth's Venture

HALF a dozen youths trained by Nehru Yuvak Kendra, Salem in Tamil Nadu have set up a small detergent soap factory at Mettupatty Thadanur about 10 km from Salem. The Builders New India Association, a voluntary youth body affiliated to Nehru Yuvak Kendra has also joined hands with the youth in starting this venture. So far, five young men have been engaged in the production of soaps and another five in selling the product.

T. Kannan, F.P.O. Salem

New Technique in Heat Treatment

THE BHPV Visakhapatnam has developed indigenous technology for stress relieving of storage spheres employing gas burners for the first time in the country. The technique has been successfully applied on three spheres of Mathura Refinery. Different designs of these gas burners were developed in collaboration with Indian Institute of Science, Bangalore, and the National Aeronautical Laboratory, Bangalore

With the development of this specialised technology, BHPV has ushered in a new era of heat treatment for large sized pressure vessels. Hitherto, for all the spheres and vessels fabricated by BHPV the stress relieving operation at site was entrusted to a foreign party

Kerala's Highest Fish Catch

OUT of an estimated catch of 1.3 million tonnes of marine fish in the country in 1979, Kerala topped the list with 3,31,000 tonnes followed by Maharashtra with 2,93,000 tonnes.

Landings in other maritime States in tonnes were: Tamil Nadu 235,000, Gujarat 191,000 Karnataka 126,000. Andhra Pradesh 91,000, Orissa 52,000, Goa 25,000 and West Bengal 11,000 according to figures available with the Central Marine Fisheries Research Institute in Cochin.

Special Number

I have been a voracious reader of your esteemed journal, "YOJANA", for the last few years and was extremely delighted to read its Special Number of 15th August 1980 in which really thought-provoking and interesting articles have been published on "30 YEARS of PLANNING". The articles are worth reading, not only for the students of Economics, but also for all those who would like to know in depth, the march of the nation in different fields.

My sincere thanks to you for bringing such a valuable issue and hope that a few more such issues on the current problems that our country is facing are brought out.

Yours etc.,
Chandrashekhar, B. Betsurmath
Basav Nilaya, Gandhi Nagar,
BELGAUM (Karnataka)

New 'Bhendi' Variety

THE Punjab Agricultural University has evolved a new variety of 'Bhendi' (Lady's finger) which has resistance to yellow mosaic virus disease. Dr. B. R. Sharma, Associate Professor of Vegetables who has evolved this variety had obtained disease resistant source from the late Dr. H. B. Singh who was a pioneer in improved 'Bhendi' varieties including the famous Pusa Sawani variety. The new line, in addition to resistance to virus is also high yielding and bears thin, long and dark green fruits. This line is likely to be released for testing under farmers' field next season.

Plantation Drive by NSS Volunteers

DURING the ten-day NSS Volunteers camp sponsored by the University of Jammu recently—90 Volunteers from seven educational institutions of Jammu region undertook a tree plantation drive planting more than 3000 Eucalyptus saplings in and around under-developed Janipur Colony.

V. K. Mangotra
F.P.O. Jammu (J&K)

NATIONAL AWARD FOR DHANADHANYE

The Bengali edition of the Yojana, "Dhanadhanye", has won the Certificate of Merit in the 21st National Awards for excellence in printing and designing for the year 1979.

Gandhi Award for Literature in Social Work

THE Association of Schools of Social Work in India has invited entries for Mahatma Gandhi Award for creative literature in Social work in 1980. Manuscripts like short stories, plays noveleties, poems etc. on the socio-economic aspects of India's development with special emphasis on the poor may be sent. The award carries a citation and cash prize of Rs. 1000. The last date for the receipt of entries is December 31, 1980. Details can be had from the General Secretary, Association of Schools of Social Work in India (ASSWI), c/o Madras School of Social Work, 32 Casa Major Road, Madras-600008. ☐

TRENDS

LIC Reorganisation

THE high-powered Era Sezhiyan Committee, set up to review the functioning of the Life Insurance Corporation of India, has recommended that the "monolithic" organisation be completely decentralised down to the branch level. In order to facilitate the process, it has also recommended that LIC be spilt into smaller, cohesive units to ensure optimal functioning and efficient customer service. The Chairman of the Committee, Shri Era Sezhiyan, M.P. has presented the report of his Committee to the Union Finance Minister, Shri R. Venkataraman. The Committee has also said that there is a need to pass on the maximum benefits to policy holders. In this context it has said investment priorities and changes in premium rates need to be looked into afresh. □

Modernisation of Steel Plants

TO, keep pace with the very rapid technological developments in the world in the last 25 years, the Central Government has planned the modernisation and technological upgradation of the public sector steel plants through up-dating of technology and replacement of equipment.

A feasibility report is being prepared for the introduction of technological improvements and innovations at Bhilai Steel Plant. It will cover up-dating of technology and process so as to secure additional production from the existing facilities at the minimum cost.

Several programmes of expansion in capacity are under implementation to enable the existing steel plants to meet future demands of the economy. It has been decided to expand the existing capacities at Bhilai and Bokaro to an optimum of 5.5 million ingot tonnes each. A start has been made with Bhilai whose plant is ageing □

Fall in Sales of Primary Co-Op. Societies

PRIMARY marketing societies in the country sold agricultural produce, agricultural requisites and consumer goods worth Rs. 965 crores in 1977-78 compared to Rs. 1,073 crores in the preceding year. According to the Reserve Bank's statistics released in Bombay on October 28, 1980, the fall in sales came on account of agricultural produce sales of which totalled Rs. 390 crores during the year compared to Rs. 483 crores in the preceding year. At the end of June, 1978, the non-credit societies numbered 1.56 lakhs. The membership was 24 million and the aggregate working capital Rs. 4,808 crores. The losses of the primary cooperative non-credi societies totalled Rs. 99.42 crores during the year while the profits earned by profit earning societies totalled Rs. 41.55 crores. The predominant position in the field of processing societies continued to be held by the cooperative sugar factories numbering 128 which crushed 297 lakh tonnes of cane during the year and produced sugar worth Rs. 601 crores □

Rehabilitation of Bonded Labourers

THE schemes for rehabilitation of all identified bonded labourers by 1982 are being formulated. The states have been urged to submit their proposals to the Ministry of Labour for consideration and clearance. In a communication to the Chief Ministers of Andhra Pradesh, Karnataka and Labour Ministers of Bihar, Madhya Pradesh, Kerala and Tamil Nadu, Smt. Ramdulari Sinha, Minister of State for Labour, has requested them to accelerate the process of rehabilitation. She added that central assistance on matching grant basis for 1980-81 is being sanctioned. The Planning Commission has alloted Rs. 25 crores to be given on a matching grant basis for rehabilitation of these labourers during the period 1978-83. During this year Rs. 3 crores have been earmarked for rehabilitation purposes. □

New Scheme of Squatter Upgradation

HUDCO has launched a new scheme to grant financial assistance for undertaking upgradation of squatter settlement on public lands. Under this, HUDCO loans will be available to Housing Boards, Slum Boards, Development Authorities, Muncipal Bodies, Improvement Trusts, etc., for providing, upgrading and improving various civic facilities i.e. water supply, sewers, community|individual baths, widening and paving of existing paths|lanes, street lighting and any other improvement considered on merits

The net rate of interest to be charged by HUDCO will be 5 per cent with repayment period not exceeding 10 years. HUDCO will finance upto 50 per cent of the project cost which is not to exceed Rs 2000 per dwelling unit to which HUDCO's loan assistance will not exceed Rs. 1000 per unit. The borrowing agencies have to ensure that the land on which improvement programme is to be undertaken is owned by them and the agency concerned grants to the beneficiary a sufficiently long tenure of not less than 20 years. □

Interest-Free Loans to Workers

HARYANA Welfare Board has earmarked Rupees 2.5 lakh as revolving fund for granting interest-free loans to industrial workers under the Workers Welfare Scheme. The workers getting monthly wages less than Rupees 500 and having two years' service, would be entitled to this loan facility. The amount would be recoverable in easy instalments. □

U.P.'s Sixth Plan

AN outlay of Rs. 9,661 crores for the Sixth Plan of Uttar Pradesh was approved by the reconstituted State Planning Commission at its first meeting in Lucknow recently. The meeting held under the chairmanship of the Chief Minister, Shri Vishwanath Pratap Singh, approved the plan strategy, reviewed the performance of various departments and sectors and discussed the aspects impinging upon the balanced regional growth and development of social services. The draft Sixth Plan aims at an accelerated growth rate of 6 per cent to catch up with the national average in the next one decade as the State today is two plans behind the all-India average. It envisages the creation of employment potential of over 56 lakh jobs by bringing down the backlog from 26 lakhs to 17.5 lakhs and absorbing 48 lakhs who would be added to the labour force during the Plan period. Besides raising the Plan outlay from Rs. 5,000 crores

to Rs. 9,661 crores, allocation for area development sector industries, particularly sugar and textile, roads, bridges, medical and public health and water supply and sanitation, had been substantially raised.□

Sale of Unripe Citrus Fruit

THE consumption of under-ripe citrus fruits like oranges, malta, etc. is harmful to human health. Besides, it gives a bad image to the citrus growing industry in Punjab because the fruits are simply not given a chance to show off their best. According to Dr. J. S. Jawanda, of the Punjab Agricultural University one finds lots of green and under-ripe maltas and oranges in the market as early as August and September even when the early varieties of these fruits do not mature before November-December. Extraction and sale of juice from such oranges has become a big business with fruit vendors. Dr. Jawanda suggests that the selling of immature fruits, should be curbed by the fruit growers themselves. This will not only ensure them better income but it will also create more demand for quality fruit which is picked and marketed at proper maturity. He says that in horticulturally advanced countries like U.S.A., Australia and South Africa the sale of unripe citrus fruit is prohibited by law. □

Fisheries in U.P.

UTTAR Pradesh proposes to take up the production of fish from inland waters on a large scale. With the help of World Bank a scheme is to be launched in 17 districts. The total water resources of the State available for the development of fisheries is 11.65 lakhs hectare. Of this the flowing rivers and canals constitute 7.2 lakhs hectare and confine water about 4.45 lakh hectares. During the next 5 years the area under fisheries is to be increased from 6,500 hectare to 32,500 hectare. The annual production of fish will thus be 45,000 tonnes.□

Transplanting of Bajra

A new technique of transplant sowing of Bajra launched by Haryana Agricultural Department in Gurgaon has been readily accepted by the farmers. The yield of Bajra per hectare is expected to exceed 18 quintals with the new technique as against 5 quintals in the conventional manner. The cost of cultivation in both the cases is almost the same.

Better Sowing Method

THE farmers can now get at least two more quintals wheat per acre without incurring any extra expenditure on inputs but simply by sowing it with a new method. The new method, known as bidirectional sowing, has been devised by Dr. G S. Dhillon, Crop Ecologist of the Punjab Agricultural University.

Bidirectional method of sowing makes the best use of sunlight which is indispensable for plant growth as the plant leaves synthesise food by the process to photo synthesis. The wheat crop is sown twice i.e. first length-wise and then breadth-wise, using half of the recommended quantity of seed and fertilizer each time. In this method, the plants attain more productive tillers, which suppress the growth of weeds to a great extent, and helps in minimizing the incidence of diseases. The only precaution to be taken in bidirectional sowing is that the seed should be sown relatively shallow and in a moist seedbed.

In the conventional method of sowing the plants in the rows get overcrowded and, therefore, attain more height to get light which results in a lot of mutual shading of lower leaves. Also, the light falling in between the crop rows is wasted. □

District Councils for Employment Opportunities

SMT. RAMDULARI SINHA, Minister of State for Labour has said that it was proposed to set up district development centres and district employment generation councils to co-ordinate activities for promotion of employment among the educated unemployed. Speaking to the Members of the Consultative Committee attached to her Ministry in New Delhi recently she stated that at present employment service was industry-oriented and caters mainly to the people in urban areas □

Tax Reforms

DR. MANMOHAN SINGH, Member-Secretary, Planning Commission has said that taxation reforms cannot be initiated in the country as long as the public sector fails to generate adequate resources through savings. This is because huge investments are made on the public sector units and if there is no adequate return from them the Government is forced to resort to stringent tax measures as the alternative source of revenue. Dr. Singh, however, said taxation laws did have scope for further simplification.

Dr. Singh underlined the need for establishing a purposeful link between fiscal policies and developmental plans. He said there was scope to harmonise tax measures and development. He further mentioned that steps could be taken to ensure that investments remained profitable in spite of the high inflation. To attract new investments in the capital market the issue of depreciation should be reviewed. While there was no possibility of a total abolition of sales tax for simple reason that this system is integral to the federal structure of the country, Dr. Singh agreed that agricultural tax could be levied. He, however, added that agricultural tax has to be introduced in such a manner as to remain an effective source of income for the Government and yet does not arouse any political opposition. On sales tax, Dr. Singh was of the view that harassments owing to procedural cobwebs could of course be checked. He expressed concern over the fact that the taxation policies still remained cumbersome and tax expert lost sight of the socio-political condition of the country while formulating the laws.

BOOKS

Challenge of Poverty

Social Work Perspectives on Poverty—by R. R. Singh Concept Publishing Company, New Delhi pages 304; price Rs. 55.

THE poor have always been treated as 'outsiders' by the society. In our own country, the poorest of the society were called 'panchames' or 'antyajas', literally meaning the 'fifth caste' or 'the last born' and they were kept out of the pale of the caste society. They were banished to the outskirts when the cities are beautified.

Poverty was a national issue some five years ago, but it seems to have crossed its peak of popularity. Now the accent is on economic growth, on increase in production, on self discipline and on making the nation strong. Poverty and poor are only secondary to these new national priorities.

It is good that the Association of Schools of Social Workers in India organised a seminar in 1976 in Waltair to invite attention of the authorities to the plight of the poor who are a very important part of the nation. The book under review is a collection of the papers presented at the seminar on the Challenge of Poverty and Social Work Education.

The papers included in this collection cover such aspects as concept of poverty, economic and social dimensions of poverty, role of human service professions in the eradication of poverty, review of existing programmes of education, research and field work and the use of creative literature on poverty and training of personnel.

Of late planners and planning technocrats have shown considerable concern in identifying the real nature of poverty. Likewise the economists and econometricians have devised various sophisticated means and methods of measuring poverty. The 20-point economic programme has made a direct effort to identify the poor category by category—the bonded labour, the landless agricultural labourer, the small farmer, the urban slum dweller, the self-employed village artisan etc. The volume under review would meet a long-felt need for indigneous literature on the most pressing problem of the country—the eradication of poverty. The eradication of poverty has been evading solution for a long time the book may succeed in informing the authorities about the multi-dimensional nature of poverty, its causes and consequences and strategies for its eradication.

One of the chapters in the volume, Chapter 4, gives a detailed account of the living conditions of the scheduled castes in an Andhra Pradesh village; this is the social aspect of the poverty.

Man is suppossed to have gained sufficient resources, for the first time in human history, to abolish poverty altogether from the face of the spaceship earth. The book would prove useful to social scientists, social work educators, planners, community workers and the elite of the country to move fast in the direction of the eradication of the ugliest disease called poverty. The author has done a good job by publishing the papers.

B. R. Kharbanda

Silver

The Saga of Silver—by S. L. N. Sinha & Janki G. Krishnan, Institute of Financial Management and Research, Madras, 1980 : pages 208 ; price : Rs. 40.

THE BOOK narrates the interesting story of silver from the ancient times till the beginning of 1980 and is confined to the standpoint of the economists, though some information is also given about the physical and chemical characteristics of the silver, its sources and industrial uses.

Chapter III highlights an account of the important role played by silver as a monetary standard and gives statistics regarding its production, consumption and price trends over the last several decades in the USA, the UK and India.

At the outset, the book also discusses the outline of a national silver policy for India and suggests that high-level silver and gold board must be set up by the Government of India.

The book is the outcome of the long association of the first author with silver, over a decade and makes a complete survey of the subject. Also an intensive study of every aspect of silver is made in fairly comprehensive manner. It is very useful not only to those who are doing research on silver but also those who desire to have first hand knowledge of the subject.

This is a welcome addition to the literature on the subject and can meet a long felt need. It is both interesting and instructive and would definitely be useful to research students. The authors deserve appreciation for producing such an excellent work

Dr. Badar Alam Iqbal

Block Level Administration

Block Level Administration—An analysis of salient dimensions—by M. Shiviah, L.S.N. Murty, K. B. Srivastava, A. C. Jana, Published by National Institute of Rural Devèlopment, Hyderabad, price Rs. 40.

THERE are six chapters on 'Block Level Administration covering the main themes viz., policy perspective and structural dimension, organisational dynamics and developmental performance, personnel problems, special programes, Planning and Finances respectively The seventh Chapter consists of conclusions on the subject. The book is based on a very exhaustive survey of available literature on the subject including the two study team reports on Panchayat Raj by Balwant Rai Mehta and Ashok Mehta.

The conclusions regarding the future rural development set up and panchayat raj institutions supports the recommendation of the Ashok Mehta Committee

viz., the Zila Parishad and the Mandal Panchayat be a hub of developmental activities while the panchayat samiti will be purely an executive committee. It is yet to be seen how far these recommendations become acceptable to the Government.

On the whole, the book is of current topical interest and will be a very useful reference material for all students of rural development. There are so many Annexures (extracts of reports etc.) in a smaller print running into several pages which put together in the bolder print of the main book, may equal, if not exceed the text. This is, however, not to minimise the importance of these annexures as they do serve valuable reference material to those who may not have the time and opportunity to get at the original documents.

H. P. N. Murty

Urban Mobility

Urban Mobility in Developing Countries—by **Dr. P. G. Patankar, Popular Prakashan, Bombay,** pages **152, price Rs. 75.**

DR. PATANKAR, who spent the best part of his career as Deputy General Manager of BEST undertaking in Bombay has now published a monograph on Urban mobility in which he has discussed from an administrator's standpoint the problems of road transportation in metropolitan cities. He hoped that his experience documented in the book could be advantageous to all developing countries, but it will require to be suitably modified before their adoption.

In Bombay 39 per cent passenger trips are made by suburban railways, and the same percentage by BEST buses; private cars accounted for 10.6 per cent of trips and taxies another 9.3 per cent. Evidently, the role of bus transport authority in Bombay would be radically different from that of Delhi and other cities where suburban railways do not operate in competition with other modes of road transportation.

After reading Patankar's book one gets a feeling that the balancing of cost, convenience and speed could be possible by formulating incentive schemes for the operational staff, differential fare for the commuters travelling at different time of the day and almost banning the private cars from the bus using roads (because the private car. according to the author, requires at least twelve times more road space per occupant than the bus).

One may agree or diagree with the conclusions and observations made by Dr. Patankar, but undoubtedly one will agree that a book of the kind is helpful both for the administrators concerned with managing road transport systems and the commuters who are always eager to raise loud protests against rising transportation charges.

—Bepin Behari

Islamic Learning

Centres of Islamic Learning in India; Publications Division, Ministry of I & B, New Delhi; by Ziyaudin A Desai; **pages 154, Rs. 15.**

ISLAMIC learning, is basically an educational activity aimed at teaching and propagation of Islamic theology. The citadels of the learning which have developed and flourished in India since the 12th century A.D. can now be proud of their sustenance through a net-work of institutions, big and small, spread all over the country, specialising in various branches of learning and representing most of the leading seats of Islam.

Here is an exquisitely produced, precise and concise volume which symbolizes a very wholesome and commendable effort of the Publications Division, a veritable Government publicity outfit, ever on the march to uphold the secular entity and democratic image of India. The book has the proud peculiarity of a well-organized compact documentation on the subject, showing in turn, region-wise Centres of learning, Modern Institutions, Libraries and Collections, culminating in a complete index of important references to the names of books and personalities figuring in the process.

The author has reflected, by and large, in no uncertain terms that the age-old Madarsa System has flourished in all its vicissitudes to perpetuate the Muslim scholarship, not only in its conservative character but has also been flexible enough to rise to the changing needs of time and to imbibe the modern outlook. Monumental institutions like Aligarh Muslim University and Jamia Milia Islamia, New Delhi are some of the centres deeply rooted in the cultural and religious traditions of Islam. But they have the distinction of being as modern as any conventional place of learning in the field of humanities and sciences. For relevant information and as a guide to the wide pattern of Islamic Learning in India, a lay reader, or a tourist may find this book quite handy. Some clear black and white illustrations of significant information add to the beauty of the volume which is priced moderately, of course on no profit, no loss considerations.

—R. Prakash

Financial Analysis of Nationalised Banks

Financial Analysis of Public Sector Banks—A Statistical Analysis: 1969-79—by Dr. **V. B. Desai. Published by Bank of India, Head Office, Bombay. Pages 140.**

THE subject of the study is very interesting and of both current and long-term interest. The working of the public sector banks—State Bank of India, seven associate banks and 14 nationalised banks—has undergone a sea change since nationalisation of 14 major commercial banks in July 1969. The statistical and financial analysis of public sector banks, which is designed, compiled and analysed by the author gives up-to-date-information on the nature and spread of a bank's operation vis-a-vis other public sector banks. The study covers the ground in a comprehensive manner, with a wealth of statistical data well arranged. The study evaluates the performance of public sector banks at micro level during the year 1979 as well as during the first decade of nationalisation.

The sifinificance of detailed and up-to-date information the nature and spead of a bank's operation vis-a-vis other public sector banks, as a handy tool for proper management cannot be over-emphasised. I[illegible] usefulness in planning is even greater.

Profile of a Political Yogi

THIS book was published on 18th September, 1980, on the occasion of 80th birth anniversary of Sir Seewoosagur Ramgoolam, the Prime Minister of Mauritius.

But Shri Anand Mulloo's first attempt for the biographical study of Sir Ramgoolam under an appropriate title 'Road to Independence' was published in 1968 coinciding with the Independence of Mauritius. After 12 years of premiership of this highly matured leader, the author has now studied him in a completely changed domestic and international background.

The life and work of Sir Ramgoolam is so deeply involved in the political struggle of the island that his biography automatically takes the form of the history of Mauritius. No student of Mauritian, African and colonial history can overlook this book. It has been written in a lucid language to suit even the temperament of school students.

From the pages of Shri Mulloo's book we are informed precisely all about the conquest of Mauritius in 1810 by the English and Indian soldiers, life transportation in 1815 of some of the Indian political and army prisoners into this island and immigration under indenture-system of Indian agriculturists, farm labourers and craftsmen. Shri Mulloo tells us further that how the Indo-Mauritian population who are descendent of these professional classes have turned barren land into flourishing cultivation, how they struggled in the past against atrocities and tyranny of the French feudalists, how they received political education in a completely new environment from leaders like Adolphe de Plevitz Manilall Doctor and Chiranjivi Bhardwaj and how they gathered under the banner of Mauritian Labour Party (MLP) and under the dynamic leadership of Sir Seewoosagur.

Shri Mulloo, due to his rich experience as a writer, historian and practical politician, happens to be a perfectly suitabile Mauritian to write this biography. In the book under review, the author has incorporated intimate information collected from the sources close to Sir Ramgoolam. He himself had many opportunities to come into contact and near association of the Prime Minister. In a communication recommending this book to the readers, Shri K. Jagatsingh, Secretary-General, MLP and Minister for Education and Culture says that our Prime Minister himself is pleased and has said that this is a well-written and a good book. "Many in India will, in a considerable detail, learn from this book the positive role played by Sir Ramgoolam in the Indian freedom movement as Secretary of London Branch of Indian National Congress and through his association with leaders like Mahatma Gandhi, Vithalbhai Patel, Lala Lajpat Rai, Subhash Chandra Bose, Jawaharlal Nehru and Sachidanand Sinha. One can find in this book a vivid account of his inclination towards the Fabian Society of Great Britain when as a student in London he was having the vision of a prosperous Mauritius to be built-up on the path of a socialist democracy and how through his methodical, determined and humanitarian approach he became the most popular leader of the island soon after his return from London in 1935. Then we come across the pages describing the fastest and phenomenal socio-economic progress of the country at the hands of him who is sometimes mistaken as slow-going. The book appears as a successful profile of a Upanishadic-wise man; a political Yogi.

The writer is so overwhelmed by diverse qualities of the Mauritian Prime Minister that almost unconsciously he goes on repeating them. An outstanding feature of the book is the impression it carries that more Sir Ramgoolam mingled with the Western style of life deeper his love became for the Indian culture It is a book of value to all interested in the study of the rise of a thoroughly accomplished welfare-state in a plural society.

Dr. Dharmendra Prasad

Dr. S. Ramgoolam (His life, his work, his ideas) Vol. I. by Anand Mulloo, Swan Printing Ltd., Port Louis, Mauritius, Pp 116. Price Rs. 25.

Quarry Workers of Yanamalai (*Contd from Cover II*)

For a quarryman children's education is a dream

to win the confidence of the quarry workers and their family members. It is really heartening to note that he is instrumental in providing a dispensary, a primary school for about 100 quarry children and a playground. Furthermore, a deep well has been sunk for drinking water and an overhead tank has been constructed

Even though the East Panchayat Union is getting a big chunk of revenue from the quarry by way of toll gate fees, it has no constructive programme for the uplift and welfare of the quarry workers

There are a lot of constraints on selling the stones to the buyers The brokers, private contractors and feudal lords prevent the quarry workers from disposing off their finished materials directly to the buyers. Taking advantage of the weak bargaining position of the poor quarry workers, the ruthless middlemen exploit the workmen by making them sell the stones etc., at rock bottom prices. An attempt has already been made by the local people to start a cooperative society to sell their products. But contrary to their great expectations they could not go ahead with the venture as the middlemen have upset their apple cart.

Recycling Waste Water

USING the power of the sun and single-celled algae, Israeli scientists are turning domestic waste water into valuable animal feed and at the same time producing purified water for irrigation at minimal cost.

The Israeli system, which has been developed at Israel Institute of Technology, Technion. is based on shallow meandering, channel-like ponds containing waste water; scientists introduce micro-algae to the sewage which already contains a certain amount of algae naturally. The combination results in a green soupy liquid.

The mixture is exposed to natural sunlight which enables the algae to release high quantities of oxygen, helping to break down phosphate, nitrate and other materials found in waste water. Most of the nutrients are then incorporated into the algae, and, after the algae are removed and the water is filtered through sand, the water is made available for irrigation.

The algae are dried, mixed with other ingredie and turned into pellets or flakes, which are f poultry, fish and cattle.

(*News fr*

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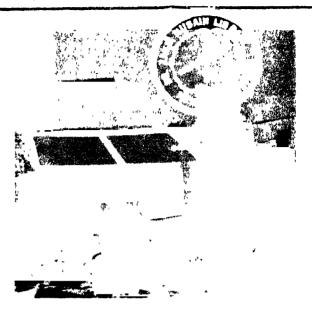
CEL Develops a Solar Hut

Vijay K. Verma*

THE Central Electronics Limited (CEL), Sahibabad, has developed Solar Photo-voltaic (PV) Modules of different types for direct conversion of sunlight into electricity. These silicon solar cells are hermetically encapsulated for protection against erosion, moisture, pollution and weathering. The Photo-voltaic Project of the CEL is sponsored by the Department of Science and Technology, Government of India. One peak watt module, on a clear sunny day gives about five watt- hours of electrical energy It can give higher energy output if the module is oriented three times a day towards the sun The energy can be stored in batteries for obtaining round-the-clock-power The batteries act as a stable source of power.

In a recent exhibition on solar energy held on the occasion of Commonwealth Prime Ministers' Conference in New Delhi, CEL demonstrated its achievements. For the remote areas where transportation of energy is not feasible, the sun power can be harnessed. The CEL put up a solar hut equipped with a television, three fans, two fluorescent tube lights and an energised water pumping system with solar arrays installed on the slanted roof The equipments were in operation with the energy derived direct from the PV modules and also through the storage batteries This solar hut would serve as a model community hall in villages

A poineering example of India's achievement in harnessing energy from the sun is Choglamsar village in Laddakh. It is the first village (in a remote location situated at an altitude of 10,500 ft) to have been lighted up with electricity from the sun A big kitchen and a hospital have been provided with tube lights drawing electricity from the storage batteries These batteries are charged during the day with two arrays of solar PV cells

*Our Sub Editor

A pumpset in front of the Solar Hut at work drawing energy from the sun

The entire process is indigenous and the credit for its fabrication goes to the Central Electronics Limited The cost of this project has been around Rs 1 5 lakh

The CEL is giving high priority to solar water pumping system for the rural India A number of villages are not electrified and the agricultural operations are slow Though the present fabrication and installation costs of these pumping sets are high, it is hoped that through further research and development, it would be possible to reduce the costs considerably It is expected that by 1982-83 the solar PV system would become the cheapest alternative for water pumping in areas where electricity is not available □

Year of the Disabled

THE United Nations has adopted a standard logo for the International Year of the Disabled Persons (IYDP) to be observed next year, India has adopted the same logo for observance of the IYDP in the country

The logo is a pictorial representation of two individuals, one of them is apparently non-disabled and the other is a disabled person Both of them hold each other's hands symbolic of solidarity, support and integration

The main theme of IYDP is "Full participation and Equality." The entire purpose of the year is to break down the social and psychological barriers that separate the disabled and the non-disabled □

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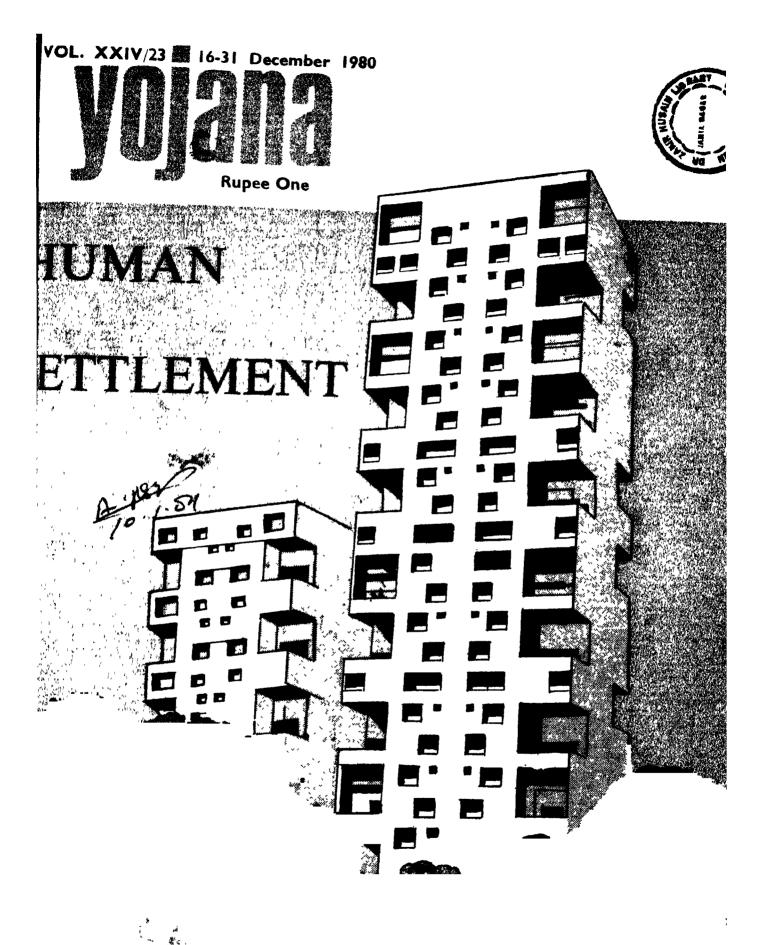
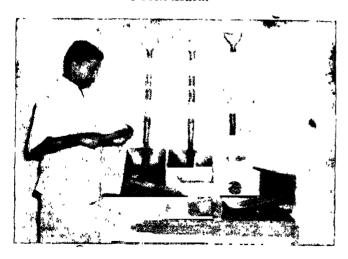

Standardization in India

Umashanker Phadnis*

STANDARDISATION is, in a sense, an inescapable part of the economic process. This is because no specific economic activity, whether it be in the matter of production or consumption, takes place in isolation, but is inextricably linked up with several other factors. And, if in this correlated totality, one component is defective and does not perform the functions it is expected to, the entire line of production suffers as a consequence. To take a simple instance, if nuts and bolts do not possess the values required of them, the end product into which these nuts and bolts are fitted will not serve the purposes to which they are intended. In fact, in the absence of an acceptance of some rudimentary concepts of standards, the economy and its productive process would virtually come to a standstill.

When the industry or agriculture is in the state of relative simplicity it is possible to survive on a rule of the thumb method of standardisation. However, as the industry becomes more complex or the demands grow on agriculture for scientific inputs, standardisation becomes a highly sophisticated exercise. And at the same time it also becomes so essential that it becomes a part of economic discipline. The critical role of standardisation was realised in India much before Independence when with growing sophistication industry found itself compelled to seek voluntary action to resulate quality control on production The result was the establishment of the Indian Standards Institution as an agency which would, on the one hand, lay down standards specifications and at the same time ensure that the production of goods, conformed to these

Some agricultural tools for which standards have been issued.

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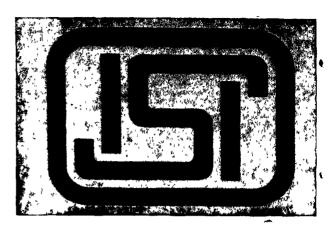
ISI Mark

specifications This voluntary effort acquired a measure of legitimization when the Indian Standards Institution Act was passed in 1962. The Act clothed the function of the ISI with legal sanctions and empowered the ISI to prescribe standards in relation to the qualities of any product or the process of manufacture as well as the power to recognise the product as conforming to the prescribed standards The Act was progressively amended in the light of experience of its operation.

The adoption of standardisation in India has been steadily progressing and in the two decades since 1960, over 10,000 standards specifications have been worked out by the ISI and the value of goods produced under the ISI certification scheme are now estimated to be around Rs. 160,000 lakh. During this period the number of licences given by the ISI, certifying that specific products conform to ISI standards are over 8,000 The range of products brought under ISI certificate has also simultaneously diversified and they not only include various items of manufacture that go into machinery but also a very large number of cosumer items such as processed food products, cosmetics, stationery items or electrical appliances

In respect of some of these products which have health hazards, it is legally compulsory that the items of manufacture conformed to the ISI specifications Such items include the LPG cylinder and some of the electrical appliances. In a large number of cases, however, it is not legally binding on the part of manufacturers to accept the ISI certification. However, what compels them to seek such certification is the saleability value of the ISI stamp In the case of intermediate goods which go into the manufacture of other finished products the producers of such product find it necessary to go in for ISI specification because it ultimately ensures the quality of the marketed product.

The span of the ISI's certification stretches out beyond consumer products and particularly noteworthy have been standards laid down by it in preparing, for

(Continued on page 22)

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EDITORIAL

The Price Front

WHEN the Central Budget was presented, it was expected that the prices would decline, or at least, get stabilised. But this has not happened and, on the contrary, the price index has been raising at the rate of about 5 points per month for the past 10 months The issue prices of rice, sugar and coarse grains in the public distribution system have now been increased. This is in keeping with the Government's policy to take increased costs of production into account and to reduce the subsidies paid from the tax-payers' money. There is also a strong case for increasing the prices of public sector products like steel, coal etc., since they are very uneconomic at present. While such increases have sound justification, they are bound to raise the general cost of living. Further, the increasing of the agricultural support prices even above the levels recommended by the Agricultural Prices Commission and yielding more and more to the demands of agitating farmers, cannot be justified and they will add to the burden on the consuming public.

The main reason for the continuing price rise this year is the further escalation in the bill of imported oil. This phenomenon has caused cost-push inflation all over the world and but for our Government's timely steps the inflation rate would have been much more than the present 1.1 per cent. Any further increase in the oil prices by the OPEC will further upset our internal price levels and erodes our scarce foreign exchange resources. While this is beyond our control, it is within the powers of our Government and people to maintain internal peace, increase production and productivity, to expand exports even at the cost of internal consumption and to reduce unnecessary expenditure.

Though the price trend is disturbing, there is no need to feel panicky. The record harvests expected this year, the resumption of industrial growth included in the infrastructure items, large scale new investments in development projects, the cut in the money supply and the scheme to open many more fair price shops will be of great help in stabilising the price level. If, at the same time, effective steps are taken to curb black money and more incentives are given to grow more oil seeds and pulses indigenously, a big dent can be made in the price problem. Lt us hope for the better in the new year. □

National Unity : Need For Vigilance

Indira Gandhi*

AN OCCASION such as this, is one for national stock-taking. We should not limit our discussions to the events only of the last few weeks or months. Our concern is what kind of India shall we bequeath to future generation—a strong, harmonious, self-confident India or a feuding, weak, stereophonic India. We talk of national integration. It is not a mere phrase but an awareness of the burden and task that history has placed on our shoulders. I have no doubt that all of us, whatever our party or political creed, hold the freedom and integrity of our country as supreme and dear above all else. But freedom and unity cannot be taken for granted. Eternal vigilance is the price of our integrity, as it is of all liberties.

We are living today in an earth of particular turmoil. This takes all kinds of different forms in different parts of the world. There are wars; there are internal upheavels; there is political and spiritual disquiet and dissatisfaction with creeds and easy formulations. It is also an age of the use of political interference as a substitute for open warfare. Forces are at work in the world which are exploiting and will exploit any weakness on our part especially at a moment like this. In many countries divisive groups receive support from outside agencies and sources. I am often asked to name the foreign interests who are interfering. It is not always possible to lay your finger on such groups or individuals. It is extremely difficult here or elsewhere. But time and again, years later, evidence has come up which has shown what kind of interference or attempted interference there has been. I am not suggesting for one moment, that our communal or caste troubles and linguistic movements are being instigated by outsiders. Neither I nor the Home Minister has blamed outside forces for the Moradabad, Aligarh and other incidents, although some papers and groups keep repeating that I have said so. But I have no doubt that any civil disturbance will weaken India and there will be groups who will take advantage of such weaknesses and such difference for their own purposes.

Most riots are provoked by a handful of persons or perhaps by a single person, but because of the prevailing atmosphere of distrust and prejudice, because of the persistence of narrow loyalities of caste, of religion, of language, personal quarrels can soon be transformed into group clashes and assume a communal colour. This is what happened in Moradabad. A court of inquiry is going into the series of events there and it would not be right to speak of the precise causes. But, when the situation is inflammable, it is not the person who strikes the match can alone be held culpable, but the whole lot who put the combustible material there. Whether it be Moradabad, or Tripura, events move at a fast tempo. Riots are becoming more brutal and lethal. We should, of course, diagnose the causes but long exercises and analysis are not always very helpful. The reports of the enquiry commissions come so long after the events that they have no utility except in the sense that everyone is supposed to learn from history. In medicine, many cures have been found before the causes have been established but here we know the causes as well as the cures. It is because it takes time, sometimes decades, to overcome prejudices and the spirit of revenge that such outbursts persist.

All in all, the manner in which religions have flourished in India is a remarkable story of tolerance, co-existence and fusion. At the same time we have been guilty of tolerating and perpetuating unjust social stratification. The old evil of untouchability was a heinous crime. The peaceful revolution inspired by Mahatma Gandhi has helped our society to change. We have thought that, with education, economic development and full democracy we could emerge into a new era of equality but education and economic development have sharpened the competition for jobs. Adult franchise has given a new lease for caste, because we are still half way through this change. The minorities and weaker sections of the community feel that they are not fully in the mainstream of national life. They feel that the benefits of economic development, of employment opportunities and the sharing of political power has by-passed them. As awakening increases and young people from these communities demand a larger share in economic advancement and political power, there may be more tensions, but I feel that this is a passing phase. The remedy is greater development, more education, more opportunities. We are at the stage when the tensions and inequalities dominate our minds. It is also unfortunate that the impartiality of the very forces who should ensure social harmony and justice and give protection is questioned. So far, our major emphasis in tackling social violence has been on the law and order angle. However, I think that we should correct this approach and give due weight also to other aspects like educational policy, employment opportunities, better understanding of our cultural traditions and so on.

Divisive Forces

No true religion can conceivably teach hatred of other religions, but we have had communal organisations which have persistently given a distorted picture. It is an unfortunate fact of life that these organisations are thriving in many parts of our country. We cannot be helpless spectators but should try vigorously to counteract the influence of such organisations by

* From Prime Minister's address at the meeting of the National Integration Council, on Nov. 17, 1980.

all political, legal and administrative means that are available. A party may gain when riots occur by blaming the Government, but such a gain is bound to be temporary. It is the people who are the sufferers and no party can make a long-standing gain out of the people's misery.

National integration has so far been mainly understood in terms of communal harmony and the atrocities on Harijans and other backward groups. Developments in the North East have highlighted another aspect of national integration. Assam is in the midst of a prolonged agitation on the issue of what is now known as foreign nationals. In dealing with this agitation we have tried to follow the path of dialogue and have shown patience and understanding. About the depth of feeling underlined in the agitation, I have no doubt. But I would like our friends in Assam, whether it is the young students, the Parishad or the Government employees or any other section of the Assamese people, to think of their problem in the larger context. They themselves keep reminding us that we should treat it as a national problem and any such problem is a national problem, but they should also keep in view the national aspect as well as international obligations, national commitments and humanitarian considerations. Assam must not suffer; India also must not suffer. Nor should hundreds of thousands of humanbeings suffer. A prosperous Assam cannot be built by striking at the root of the national integrity, unity and our cherished ideals. The misgivings and apprehensions of minorities cannot be over-looked. In a democracy such as ours issues must be resolved through discussions and a solution found, which, if not satisfactory to all, at least is the least unsatisfactory to all concerned.

While Government will spare no efforts to see that genuine apprehensions are allayed and economic development of the States of the North East accelerated, a great responsibility rests on political leadership and on the idealistic youth to keep the All-India perspective before the people, and specially in view of their own future, what we hope will be enlarged and growing opportunities.

The animosities between the tribals and non-tribals in the North East which had been dormant have revived. Largely these can be attributed to the divisive forces which have been at work and gained impetus during the recent past. People who have lived in amity for generations have suddenly begun looking at one another with suspicion. All of us here are aware of the delicate problems of the North Eastern States. I do not think I need to say more about this question at this moment.

When this Council met in Srinagar in 1968, it was forcibly brought out that the term minority should not be regarded as meaning only Muslims. For, in Kashmir, the muslims are the majority. In some places, christians are the majority. In fact, one of the special characteristics of our country is that no caste or group is in a position to dominate over the whole country. Let us convert this fact into a national advantage to ensure that there is a real and growing relationship of brotherhood and mutual responsibility based on trust. But the present is full of danger signals which add special urgency to our meeting and to our work. We are here, in all humility, to search and work together for solutions. I have no doubt that many useful suggestions will emerge from our meeting which we can act upon not only as the government and political parties but as custodians of the people's well-being.

Need for an Efficiency Drive

THE HIGHEST PRIORITY has been given to the core sector items such as energy, transport etc., in the draft Sixth Five Year Plan, said Dr. M. S. Swaminathan, Member, Planning Commission. Allocation for science and technology is also being stepped up and there will be provision in every sector for more research and development, he added

Dr. Swaminathan made this observation at a meeting of economic editors in New Delhi on November, 14. He mentioned that a new Department of Environment has now been created and a separate cell for the integrated development for Himalayan region will be set up in the Planning Commission on the lines of the group already established for the Western Ghats region.

The Member stated that linkages would be established between education, employment and development. In the field of health there will be more stress on joint efforts by the Government and voluntary organisations. Family planning and population stabilisation, minimum needs programme and employment generation will be the basic requirements of development. Dr. Swaminathan also pointed out that a special Central outlay of Rs. 100 crores per year has been approved for the economic development of the Scheduled Castes.

He stated that the Planning Commission has been repeatedly urging the State Governments for implementing the land reform measures which have already been enacted. He pointed out, in this connection, that in some States there has been more progress than in others.

Dr. Swaminathan stated that more than the monetary constraint it was the general lack of efficiency that was affecting development and that there should be an efficiency drive, as suggested by the Prime Minister at the last meting of National Development Council.

A Futuristic Projection

Human Settlement in India in 21st Century

Biman Sen*

WITH THE EVOLUTION of human society, complexity of human settlement increased. Man left his nomadic state of existence and started settling on agriculture which in turn increased the demand on land for agriculture and buildings and for other infra-structure. This led to indiscriminate destruction of natural wealth, and environment. To provide for human settlements, natural forests grown over millions of years were cut lavishly and wastefully—sometimes amounted to human vandalism. These human actions are responsible for destruction of many a flourishing civilization converting the beautiful land into deserts.

If one traces the origin of deserts, major contribution could be attributed to the vandalism of man. According to archaeological evidence the Northern African Sahara desert covering Algeria, Tunisia, Libya and part of Egypt, which was once known as Carthage, (where great Cartheginian civilization flourished, where Hanibal was born, and destroyed the myth of great Roman supremacy), was created by Romans by destroying the natural environment to conquer Carthage. In fact Sahara, the most famous desert is hardly 2000 years old. Here once elephants, rhinoceroes, hippopotamuses and other animals which could only survive in dump humid climate and thick vegetation, used to roam about.

Rajasthan, Gujarat and Sind deserts were once known to be the cradle of a most sophisticated civilization known as Harappan civilization. According to archaelogical evidence, about 3000 to 2000 B.C. when pre-Harappan and Harappan culture flourished in the valley of Saraswati, it was a natural habitat of animals like elephants, water baffaloes, rhinoceroses etc. Rajasthan desert area used to be well-wooded (forest) and had moist climate suitable for living for such animals. According to scientists like Dr. S. L. Hora, Dr. S. P. Malhotra and others, the Rajasthan desert is largely man-made resulting from uninhibited cutting down and burning forests. The crucial problem of Rajasthan desert is one of human ecology. Over-exploitation by man of water, trees and soil resources has disturbed the ecological balances of the area and led to progressive degradation of resources. Over-grazed land, shrinking forests and eroded agricultural fields show the imprint of man's vandalism against nature and his own environment.

According to scientists, once the balance in ecosystem is disturbed, nature starts its vengeance. Once the trees and vegetation are destroyed in coastal areas, the wind transports sand from the sea coasts and brings change in climate which creates desert conditions. According to Dr. J. B. Auden, the famous geologist, it is an established and obvious fact that wind is very effective in transporting sand and dust, and constant desert wind such as that which controls formation of sand dunes over such an extensive area of westeren Rajasthan must also transport salt, if any loose salt is exposed in Rann of Kutch. The desert storm has tremendous power in driving sand and dust to a great distance. In March 1901, a desert storm in Sahara, carried about 2 million tons of sand over Europe over a distance of 2000 miles as far as Baltic Sea. The distance between the Rann of Kutch and Western part of Bikaner is only 400 miles.

There is much evidence available in the world to show how fertile land gradually assumed desert conditions due to agricultural practices, overgrazing by sheep and other animals, and cutting down of woods indiscriminately and destroying natural vegetation.

It is unfortunate, that the people of India have not learned from past experiences. The result is that (even today) as a result of human action, India is suffering from flash floods, drought, soil erosion and other vagaries of nature. Deforesting of the Himalayas and other areas are the living proof of human vandalism against nature. Who suffers due to it? It is the common man. Inspite of all these, pressures are still being built up to destroy a part of the 'Silent Valley' in favour of irrigation and power forgetting the ultimate result of such an action. If any part of the 'Silent Valley' is destroyed, it may create desert conditions in whole of the Southern part of the country. It will pave the way for another Rajasthan desert in the South.

Impact of Energy on Human Settlement

It may not be wrong to say that human culture and civilization began with the discovery of fire. Since then, man constantly searched for new energy sources for better quality of life and improved human settlement. In fact, one may say—evolution of energy sources is the story of the evolution of human society. Today the index of energy consumption is the index of progress of various countries of the world.

With the multiplication of settlements, man's search for more and more portable energy sources began. First the primary source of energy was the wood. Even today, wood remains the major energy source for the developing world. The discovery of coal, first fossil fuel, led to 'Industrial Revolution'—which brought in a new concept of human society with all its complexities. Soon, oil (petroleum) became a major competitor of its sister fossil fuel—coal. The main preference to oil was its portability. Weight to weight, oil has more

*Executive Director, International Educational Consortium.

energy content and it is easy to transport through pipe lines. With the complexity of life in an industrial society, there was demand for more and more energy sources. This thirst for energy brought in other forms of energy sources like hydel power and nuclear power etc.

Once the trees and vegetation are destroyed in coastal areas, the wind transports and from the sea coasts and brings change in climate which creates desert condition.

The main reason for oil becoming the major energy source for commercial purpose was low production cost apart from its easier transportability. However, with the coming of nuclear fuel in late 1950s, it became a potential competitor to oil, mainly because of its advantage over others in terms of concentration of energy per unit. There are many economic advantages of nuclear fuel. In comparsion to other energy sources, it is practically weightless. With all the disadvantages like greater risk of pollution and environmental hazards, it will become one of the main fuel sources for energy for commercial use in the near future because of the oil crisis. Moreover the world resources of nuclear fuel reserve are far greater than fossil fuels.

Whether nuclear fuel or fossil fuel, they are exhaustible and non-recycleable. Ultimately man has to go for renewable sources of energy. Such energy sources can be broadly classified into hydro-energy, wind energy, solar energy and bio-gas i.e. energy produced from agricultural and forest products and wastes including human and animal wastes. Except bio-gas system, all others have their own limitations and complexity.

Before the 20th century is over, man with his research capability and strong determination will be able to develop an energy system that will be able to run an industrial and highly complex society in the age of science and sophisticated technology, without imposing ghastly penalties on living things.

Immediately perhaps there will be a mixed energy system composed of renewable and non-renefable energy in future. Bio-gas energy with proper mix of such mix will depend on situational environment. However, ultimately, non-renewable energy source will automatically be phased out.

Of the renewable energy sources, choice of any particular source or sources will depend on the environmental situation and capability of a country. However, one may assume without hesitation, that agricultural and forest products and wastes, over which man has supreme control will be the major fuel sources for energy in future. Bio-gas energy with proper mix of hydro-solar and wind will constitute the energy spectrum. Since agricultural and forest products and wastes will be the main sources of energy for commercial and other purposes, there will be need of changing the existing settlement pattern of man leaving major land mass for forests and agricultural products. This will create a new dimension in development planning. Many existing notions of development may have to be discarded and replaced by a new development strategy where conservation and development would be balanced in the best interest of human society.

Conservation and Development

It is only after the World War-II that there has been a mass awakening for environment protection to save the world from man made pollution which is gulping the entire world and taking it to the path of total destruction. There have been a number of national and international conferences to formulate a proper strategy in this respect. Even international agencies have been established to tackle the problem. However, in respect of conservation of forests, there have been conscientious efforts throughout the highly developed industrial society since industrial revolution. Industrially advanced countries have always paid great attention to conserve forests.

After the energy crisis created by the petroleum producing countries, there is a general awakening for conserving all non-renewable, non-cycleable natural resources and using them most economically.

As regards conservation of forests for protection of environment, all the advanced countries have taken adequate steps through national efforts. Take for example the United States of America. Since its independence, American leaders repeatedly advocated conservation of forest wealth. Although part of the forest wealth in the USA was destroyed by indiscriminate and wasteful cutting of trees since 1607, when the Virginia company established its colonies in America, upto date, 70 per cent of it's forest still exists. Today, the U.S. forests cover over 740 million acres i.e. about 300 million hectares (India's total land area is only about 328 million hectares). According to Dr. Kathleen N. Wiegner (Energy in the Wood—*Span*—Sept. 1980), since 1952, the first year records were kept, annual net growth of wood (in the context of forest) has risen by 56 per cent. This means that while Americans are consuming more and more forest products, wood growth has exceeded the harvest leading to an increase in standing timber. At present, the USA is only growing trees at an estimated 61 per cent of its productive capacity. According to Dr. Wiegner, with better management, the US could double perhaps triple the productivity of its forests within 50 years.

Against, this, if one examines the situation in India which is a developing country, and always paid great respect to trees, in fact, most of the famous trees in India are associated with some god or goddess. Inspite of that, there has been lavish and senseless destruction of forest wealth, through extensive agricultural expansion and for use as fuel and for other commercial purposes. This indiscriminate destruction of forests, has been responsible for flash floods, droughts, soil erosion etc. Against the forest areas of America i.e. about 300 million hectares, India has hardly about 65 million hectares under forest which constitutes only about 21 per cent of total land area.

Agricultural and forest products and wastes, over which man has supreme control will be the major fuel sources for energy in future.

Development is an integrated process. No single component of development can be considered in isolation. If India has to develop its agriculture, industry and other infrastructure, one has to examine the total socio-economic situation in the country today and what can be projected twenty years hence.

India has a very limited land and a huge population to support. India's total population, today may be of the order of about 660/665 million. It is expected that by the end of 20th century and beginning of 21st century, it will have a population of about 900/950 millions. India's total area is about 328 million hectares of which about 29 million hectares are barren and uncultivable and about 16 million hectares waste land which could be put to use through extensive scientific research. About 139 million hectares net are sown and about 13 million hectares are under permanent pastures and grazing land. Only about 65 million hectares are now under forest which accounts for hardly 21 per cent of the total land. Balancing of ecosystem itself demands about 35 per cent of land under forest. At present India is using much more land for agriculture and grazing than it can support.

Considering the existing energy crisis and India's potential energy resources, we have no option but to go in a big way to agro-forest resources for energy through bio-conversion methods. Oil from wood is already in sight. Wood and its by-products are already being used to make many chemicals like plastics, synthetic fibres, acetone formaldehydes, benzene, phenol, ammonia etc. Wood ash can be used as a substitute for chemical fertilizers, not to speak of other consumer articles like paper, building materials etc.

According to Dr. C. Edward Taylor, Corporate Manager of Environment Control for Lousiana-Pacific "Wood gasification is cheaper than coal gasification and not all that complicated, more over, there is no sulphur to clear up afterwards".

In view of the position already explained, if India has to meet all its future commitments, it should have minimum of about 60 per cent of its land under forest (about 196 million hectares) i.e. 2/3 of America's forest area. This leaves only about 102 million hectares for agriculture, infrastructural needs, living accommodation for entire population, not to speak of land to be used for hydro-electric projects etc.

It is thus observed that India has to change the very concept of human settlement pattern and adopt intentive, capitalised agricultural system with extensive

Indiscriminate destruction of forests, has been responsible for flash floods, droughts etc.

application of science and sophisticated technology. It cannot afford to maintain the luxury of villages. It will have to drastically change its food habits from cereal-based to marine and other products, like poultry, animal farm products etc., to survive and maintain its population with minimum need of food.

Future

If India wants to be a prosperous country and a happy nation in the twenty-first century, it is high time for initiating an integrated planning of socio-economic development based on a more scientific basis with a more programmatic and futuristic outlook than basing on emotional and other grounds for short term benefit. The present system of emperical planning will not serve the purpose for future need, it will only prolong the agency and distributes poverty to larger population. It will have to abandon the utopian idea of two dimensional rural development, and prepare for deep urbani-

Considering the existing energy crisis and India's potential energy revources, we have no option but to go in a big way to agro-forest resources for energy

sation. It may be emphasised that according to the present trend, by the beginning of twenty-first century more than 60 to 70 per cent of world population will live in urban areas, if present rate of migration to urban areas is maintained. It is likely that the rate of migration may be higher in future. Therefore India's salvation lies not in rural India but in urbanised India with solid industrial base.

If any plan is to succeed in India, the most important action that need to be taken immediately should be a basic land-use plan to control the land transactions and utilization. This means the government will have to legislate on basic land-use under which the land should be divided into following areas :—

(a) Forest areas

(b) National parks and national conservation areas

(c) Urban areas and areas for infrastructural and industrial needs

(d) Agricultural areas.

It should have proper regulatory provision for adjustment of land-use wherever such areas overlap on the basis of national needs.

The main objective of such legislation should be to prevent land speculation, thus, to prevent rise in land prices. This will enable to draw surplus money now invested in land speculation to development of industry and other socio-economic activities. The objective may be better achieved by nationalization. If however, the government is averse to nationalization, it may adopt measures taken by other countries like Japan etc. to stop speculation on land and accelerate better utilization of the same. This can be achieved by heavy taxation on the land transaction income, with the aim of returning that part of profit which corresponds to the rise in land prices to society for social benefit. Japan took similar measures which helped it to influence price trends. In 1975 for the first time since the end of the world war II, the land price in Japan was down as much as nine per cent of the preceding year. In contrast to this, Delhi Development Authority has helped the land speculators to raise the price of land sky high. The DDA, instead of encouraging group housing under its own management or through recognised housing cooperatives started speculation by auctioning lands. Delhi cannot afford the luxury of continuing single storey or double storey houses. It is high time that for better utilization of land, Delhi should resort to high rise multistorey buildings with well planned social forestry, i.e. wood in the form of parks,

picnic spots etc. To meet the pressure of demand for housing, the government may establish House Building Corporations in all the States with public subscription as it has established public sector industries through loans taken from public for larger and long term social benefit. One of the sources of black money transaction is the existence of speculation on land. This has also increased the house rent to a fantastic limit amounting to social exploitation. Such house building corporation in the public sector will help to check land speculation and promote economic and better utilization of land. It will also stop upward rise in house rent which will automaticaly check many corrupt practices prevailing at present.

Another advantage of such legislation, is that the government will be in better position to control the haphazard development of human settlement, and plan more effectively new township in a systematic way, keeping in view economic and proper infrastructural arrangement.

It is obvious that major forest areas should be located in the coastal areas and river catchment areas in addition to natural park and national conservation areas. Agricultural areas should be located nearer to townships built for living and industrial purposes. Details of such plans need to be drawn up carefully after examining various pros and cons.

It may be visualised that in the twenty-first century, human settlement in India may assume a completely new pattern quite opposite to the existing pattern, which is highly biased towards rural economy. In future, major townships will grow by the side of the national highways joining one part of the country to another. Each township having its own high rise residential areas supported by proper infrastructural provision, including social forestry in the form of woods for environmental balancing. The major energy generating units may be located at the source point i.e. coal pit head if any primary source of fuel is coal. It may be located in the forest area if primary source is forest product and so on. Obviously agricultural areas have to be located adjacent to living areas. Location of industrial units will depend upon the type of industry and its input sources. It is obvious that major forest-based industries like oil from wood, plastics and other chemicals and products produced from forest sources and wastes should mainly be located in the forest areas. Transportation of liquid product could mainly be done through pipe lines. As regards solar and wind energy sources, these should serve the needs of agriculture and other household purposes. They along with hydro-electric sources should serve as primary energy source for conversion of forest and agricultural products and wastes for useful consumer articles and chemicals like papers plastics, oil etc. The forest products and agro-based industries will be able to create enough jobs to absorb surplus labour thrown out to the labour market due to intensive agriculture based on high technology and science to produce enough food for the growing population of India.

Now that, India has, at last, adopted long term perspective planning for development over 20 to 30 years, it is essential that first priority should be given to the type of human settlement that the country should choose for 21st century. The nature of such settlement would determine the strategy for future planning. □

Bangladesh Economy on the March

Navin Chandra Joshi*

Born as an independent country on December 16, 1971 through one of the bloodiest of struggles in history, the *People's Republic of Bangladesh*, with a population of about nine crores, is a deltaic region of 55,598 sq. miles formed by the rivers Ganga, Brahmaputra, Karnaphuli and Sangu. More than 85 per cent of the area of the country is flat alluvial plain, criss-crossed by innumerable tributaries and distributaries. There are some 68,000 villages in this primarily agricultural nation which ranks third among the major rice-producing countries of the world. It is also the world's largest producer of jute, the golden fibre. Its other crops are tea, tobacco, pulses, sugarcane, etc. Its principal industries comprise jute, cotton textiles, steel, shipbuilding and engineering, chemical and petrochemical, and sugar and food industries. Bangladesh is endowed with rich natural resources like coal, natural gas, peat, limestone, glass sand, ceramic clay and some heavy minerals. The country is now well set on march towards economic prosperity through exploiting and optimising her natural resources.

The economy of Bangladesh is predominantly agro-based. Agriculture alone provides 57 per cent of the national income, giving employment and sustenance to about 85 per cent of the population. Real development of the country, therefore, pre-supposes development of its agriculture. Being conscious of this situation, the government has given highest priority to this sector as a national development strategy.

Economic planning in the country commenced with the launching of the First Five Year Plan in 1973 with the following objectives in view :—

(a) Rehabilitation and reconstruction of the war-torn economy.

(b) Increase of Gross Domestic Product (GDP) by 5.5 per cent annualy over the Plan period providing for an annual increase of 2.5 per cent in the per capita income.

(c) Generation of employment opportunities for absorbing new entrants to the labour force as well as for reducing unemployment and under-employment.

(d) Reduction in the dependence on foreign aid through export promotion and import substitution.

(e) Transformation of the institutional and technological base of agriculture with a view to attaining self-sufficiency in foodgrains.

(f) Arresting the rising trend in the general price level, achieving stabilisation and effecting reversal of the rising trend of prices of essential commodities.

(g) Reduction of population growth rate from 3 to 2.8 per cent annually.

(h) A more equitable distribution of income and employment to ensure better social justice.

The Plan had a total outlay of Taka 44,550 million at 1972-73 prices of which Taka 39,520 million was in the public sector and the remaining in the private sector (Re. 1=Taka 2.11). Taka 18,000 million were estimated to be the external capital inflow during the Plan period.

Due to certain difficulties the targets could not be reached during the first two years of the *Plan*. The Plan was then revised and a hard core three-year Plan (1975-78) was formulated taking into account the realities of the situation. After the completion of this Plan, another two-year Plan (1978-80) was launched in July, 1978.

Second Plan

The current Second Five Year Plan (1980-85) is supposed to be the first-ever pragmatic exercise in economic planning. It envisages an overall growth rate of 7.2 per cent of which foodgrains production (7 per cent) and manufactures (8.6 per cent) would be the major components. Bangladesh had witnessed an annual growth rate of 4.3 per cent in GDP over the past eight years. This achievement was short of the 5.5 per cent target of the First Five Year Plan and 5.6 per cent of the interim Plan. One significant kingpin of the current Plan is the effort to balance the needs of public and private sectors. In the Plan emphasis has been accorded to investment in agriculture for increasing rice and wheat cultivation. The irrigation potential is being increased from 4.3 million acres to 10.2 million acres during the Plan period. High priority has also been given to increasing cotton cultivation while the target for jute has been fixed at 6.5 million bales by 1985 compared to 5.4 million bales at present.

The industrial sector of Bangladesh contributes 8.1 per cent of the country's GDP and accounts for about 70 per cent of its foreign exchange earnings from export. As a result of some basic changes made in the country's industrial policy soon after independence, the public sector emerged as the predominant sector. A large number of industrial units abandoned by non-locals were also transferred to the public sector for operation and management. There are now about 400 industrial units employing over three lakh workers under the control of more than half a dozen public sector enterprises. The industrial policy envisages mixed economy with the major responsibility of the government for planned development of industries. The private sector is, however, receiving more and more encouragement and this is quite promising for lifting the economy to a higher pedestal of growth. The jute industry accounts for nearly half the industrial earnings. The manufacture of workshop machinery, diesel engines and pumps has already begun and is being expanded further.

*Reader, Motilal Nehru College, New Delhi.

The small-scale and cottage industries contribute to the bulk of employment in the industrial sector as also in terms of value added. Their contribution is to the extent of 5 per cent to the GDP as against 6 per cent of the large-scale industrial units. Besides, about 70 per cent of the total industrial labour force is engaged in small-scale and cottage industries. It is true that in this sector, Indian entrepreneurs can play an important part by setting up units in Bangladesh.

It is significant to note that the private sector in Bangladesh has been allocated 22 per cent of the current Second Five Year Plan outlay as compared to the 11 per cent in the First Five Year Plan (1973-78) and 16 per cent in the subsequent Two-Year Plan (1978-80). A moratorium on nationalisation of any industry in the private sector was declared by the government in December 1976. Even as the economy of Bangladesh is characterised by low level of savings, insufficient infrastructural facilities and a small base of commerce and industry, the private sector of the country is likely to be predominant in agriculture transport, trade and services spheres in the near future. Since the small entrepreneurs of the country are enterprising and hardworking, private sector is bound to get a big boost during the current Second Plan period.

Foreign Trade

In the matter of foreign trade, Bangladesh has been having a steady growth in its export trade in recent years. As against the figure of Taka 5520 million in 1975-76, the export in 1977-78 was of the value of Taka 7480 million showing an increase of 35 per cent. The chief export items are jute and jute products, tea, leather, newsprint, paper and hardbroad, handicrafts, matches, frozen froglegs and shrimps. The non-jute items constituted only 19 per cent of the total exports but the recent diversification programme has improved this to 31 per cent now.

Bangladesh has now launched a crash development programme for jute production so that there is an increase in per-acre yield and reduction in cost of production. Under the programme, one million acres of land will be brought under intensive cultivation by using all types of inputs.

The major imports of Bangladesh are mineral fuels, vegetable oils, fertilisers, machinery. During the current Plan period, while the total export earnings are planned to increase from US $ 630 million to US $ 890 million, the total merchandise imports are estimated to cost well over US $ 15 billion making the import bill to rise to US $ 3.5 billion from US $ 2.5 billion in 1980. The trade deficit is going to be wider and it is difficult to fill in the widening gap.

TABLE I

Foreign Trade Between India and Bangladesh

(in Rs. lakhs)

Year	Import from Bangladesh	Export from India	Balance of Trade
1970-71	..	33	+33
1971-72	negligible	4297	+4297
1972-73	346	16824	+16478
1973-74	1704	5876	+4174
1974-75	918	4223	+3305
1975-76	465	6219	+5754
1976-77	607	5482	+4875
1977-78	115	5160	+5045

With regard to trade between India and Bangladesh, Table I shows that it is overwhelmingly in favour of India.

The year 1972-73 was the highpoint in India's exports to Bangladesh but this position could not be sustained later on. The opportunities to improve trade between the countries are immense. There is a tremendous interest in Bangladesh to work with Indian industry and this has not yet been taken advantage of. With mutual cooperation between the two countries, the negative balance of trade of Bangladesh (Taka 433.7 crores in 1973-74 increased to Taka 732.3 crores in 1976-77) could be controlled to some extent.

Foreign Collaboration

It is encouraging that the role of foreign private investment in Bangladesh is recognised as an important catalyst for industrialisation. The Government welcomes it in both private and public sector industries. In the former foreign equity participation is encouraged in the fields where technical knowhow is not locally available. It is encouraged also where technology involved is complicated, capital outlay is large, industry is based on local raw materials or the export-oriented industries. Technical collaboration in various forms without equity participation is allowed in almost all types of industries. To attract foreign investment, the Government has declared interest on foreign loan as tax-free. The policy of encouraging foreign investment has attracted foreign entrepreneurs in over 20 projects involving investment of more than Taka 210 million in canning and preservation of fruits and vegetables, jute manufacture, readymade garments, repairing and servicing of ocean-going vessels, hotels, marine diesel engines, fish freezing and pharmaceuticals.

To conclude, Bangladesh economy can sustain itself by improving the productivity of land, utilising its own natural resources to the maximum possible extent and modernising the industrial sector. Table II gives a snapshot view of the vital staistics pertaining to economic growth in the country.

TABLE II

Gross Domestic Product of Bangladesh

(At current prices in million Taka)

Sectors	1972-73	1978-79
1. Agriculture	26,100	78,745
(i) Crops	19,761	56,604
(ii) Forestry	1,240	4,754
(iii) livestock	2,230	10,504
(iv) Fisheries	2,869	6,886
2. Mining and Quarrying	1	1
3. Industry	2,895	10,312
(i) Large-Scale	1,870	5,815
(ii) Small-Scale	1,025	4,502
4. Construction	1,529	7,233
5. Power, Gas, Water and Sanitary Services	130	262
6. Transport, Storage and Communication	3,366	9,547
7. Trade Services	3,829	15,634
8. Housing Services	2,454	9,338
9. Public Administration and Defence	949	3,567
10. Banking and Insurance	559	1,454
11. Professional and Miscellaneous Services	3,300	8,680
12. GDP at Market Prices	45,112	144,774
13. Indirect tax net of subsidies(—)	1,061	8,142
14. GDP atcurrent factor cost	44,051	136,632
15. Per capita income	598	1,611

15 DPD/80—3

Third World's Mass Communication Problems

Vasant Sathe*

MANY NATIONS in the developing world of Asia, Africa and elsewhere are striving hard to develop their mass communication media to serve the urgent need of social change. I am glad that there is a keen spirit of cooperation between the developing nations to share their experience in training of media personnel and media technology and experience as well as exchanging of audio-visual material of information values. I recall the initiative taken by the Non-aligned nations to develop sources of collection and dissemination of information to be shared mutually between them as also with the developed world. The Non-aligned News Agencies Pool is an association of equal partners exchanging information through a network linking a series of re-distribution centres. I am glad that the Pool is functioning through 60 news agencies on the four continents. I am told that efforts are continuing for the setting up of an Integrated Telecommunication network for the Pool.

Our countries have been facing challenges in the light of the recent technological advancement. I believe that only a concerted plan of international action can help to solve these pressing problems of newsprint scarcity, communication tariffs and equitable use of electro-magnetic spectrum and geo-stationary orbit. The meagre resource position of newsprint and paper has imposed severe restrictions on the growth of newspapers and the availability of print word information for larger sections of our growing generation.

We welcome the setting up of the International Commission for the Study of Communication Problems under the Chairmanship of Mr. Sean MacBride. The Commision Studied in depth communication facilities available in developing countries and the need for their expansion. We express our appreciation to the Chairman and the Members of the Commission for their painstaking work. We endorse the Commission's basic approach to the need to work towards a new World Communication Order which will ensure a free and more balanced international flow of information. Many of the recommendations give an insight into the problems connected with communication within and between countries.

The MacBride Commission aptly mentions paper as the first of the three inputs required to strengthen the communication policies of developing countries. We feel that the requirements of the other media like the photographic and cine-films, magnetic recording tapes etc. should also be included in the wider ambit of the associated media of communication. It need not be emphasised that magnetic tapes are the essential raw-material for communication through Radio and Television broadcasting. Manufacturing skills for magnetic tapes through transfer of appropriate technology becomes essential when we talk of development communication inputs.

Then there is the question of high tariff structures. The most exciting development in the field of broadcasting has been the introduction of satellite technology. However, prohibitive tariffs and lack of access to appropriate ground segment technology inhibits developing countries from utilising the existing global and regional Satellite systems for the distribution and exchange of Radio and TV programmes.

The issue of utilisation of radio frequency spectrum and the geo-stationary orbit, has been a burning question for many years. We have made our position on this issue amply clear at the World Administrative Radio Conference held last year. We reiterate our view that there should be equitable distribution of these two natural resources as the common property of mankind.

I should also like to draw the attention of this Commission to another important aspect and that is the technological choices before the developing countries. Here, we would suggest some kind of standardisation of the high cost of components of the media hardware. Technological innovation must continue. Research and development activity must be emphasised infrastructure and indigenous capacity to absorb technology must be developed in the developing societies lest they become totally dependent on external assistance.

There is keen spirit of cooperation among the developing countries to share experience in the training of personnel in mass communication media and exchange of audio-visual material of information value.

We believe collective self-reliance among developing countries is an imperative. This does not mean that we exclude international cooperation : indeed, we consider it indispensable. We in India have always stood for mutual cooperation, and would like other developing countries to draw upon the collective resources to meet their specific requirements.

I should like to draw the special attention of this Commission to the work being done by the Indian Institute of Mass Communication. Its courses on audio-visual media, its news agencies training programme and developmental communications and its publications have attracted attention and evoked a positive response from a large number of developing countries. Professionals, students and trainees from a number of Asian, African and Arabian countries have participated in our courses and seminars. We have

(Continued on page 15)

*From the address of Minister of Information & Broadcasting at the 21st session of the General Conference of UNESCO at Belgrade—October 13, 1980.

Goat—A Friend or Foe of the Indian Farmers ?

A. Subbrama Naidu*
K. Seshagiri Rao*
Y Nayudamma**

Goat—a poor man's cow

CONFUSION AND CONTROVERSIES continue to exist on the role of goat and its relative importance in the livestock husbandry. Because of its voracious browsing habits it has been labelled as an enemy of both the farm and the forest. Nevertheless, for its effective economic contribution through its prolificity and production of meat, milk, manure, skin and hair, it is reckoned as 'KAMADHENU' of the poor. In the absence of objective studies and reliable information on its management practices and on its economic returns, much confusion and controversies continue to exist. Laws were enacted to discourage goat farming and restrictions on its entry into the forest were imposed. Added to these measures, the National Commission on Agriculture recommended a constraint on goat population to bring it down from the present level of 70 million (1979) to 40 million by 2000 (A.D.). One does not understand why the poor goat should be subjected to such a harsh treatment. A thorough study should have been conducted on the economic returns of goat rearing in relation to other categories of livestock and on the likely impact of such regulation on those whose main livelihood is goat husbandry. The herdsmen, landless poor and marginal farmers will be most adversely affected by such restrictive policies.

Policies framed to effect a reduction of goat population also pose potential threat to the prospects of the leather industry which mainly depends for its raw material on this livestock Its definite edge over other categories of livestocks in the economic contribution ought to have prompted the P & D institutions in the country to evolve and popularise dual purpose breeds amenable for stall-feeding and for regular farm management techniques.

India's Goat Population

A study of world statistics on goat reveals that this animal thrives mostly in Asia, Africa and South Africa. More than 38 per cent of the world's goat stock of 404 million is shared by India, China, Pakistan and Bangladesh. With a total of about 69.7 million of this livestock India has the largest goat population in the world. A Statewise break up of this figures shows that Rajasthan, Bihar, Uttar Pradesh, Madhya Pradesh, Maharashtra and West Bengal have 64 per cent of the country's total stocks. Rajasthan with about 12.2 million goats leads the other States.

Goat in Indian Economy

Goat occupies an important place in Indian ecoomy It serves as a major source of meat and its rearing has been an important avocation for rural and traditional herdsmen, especially in areas which have not been under regular canal irrigation system. During the years of drought or failure of crops goat rearing provides alternative source of definite income to the farmers who maintain certain number of goats in view of their multi-potential nature. Herdsmen maintaining cattle or sheep, do prefer certain number of goats to serve as 'grazing guides' to lead the rest of the stock In tribal areas, goat rearing acquires special importance as a source of income and food. Goat population is the second next to cattle in the bovine category and is 50 per cent more than that of sheep in the country Even in the absence of a special goat development programme in the country its population increased from 47 million in 1951 to 73 million by 1977.

According to the Director of the Central Sheep and Wool Research Institute, Goat Management contributed around Rs. 3500 million to India's Gross National Product in 1974. By computing at 1978 prices of skins, meat, milk, etc. its contribution works out to Rs. 6714.1 million per year, as shown in Table I below

* Economists, Central Leather Research Institute, Madras
** Distinguished scientist.

Table I : Estimated Annual contribution of Goats to G.N.P.

	Year of Estimate	Production	Average estimated price in Rs.	Total value (in million Rs.)	Percentage share
1. Meat	1976	0.27 million tonnes	12,000.00 per tonne	3240	48.3
2. Raw Skins	1978	43.00 million pieces.	40.00 per piece	1720	25.6
3. Manure....	1975	113.00 million tonnes.	10 00 per tonne	1130	16 8
4. Milk	1971-1972	0.59 million tonnes.	1,000.C0 per tonne	590	8.8
5. Hair					
(a) Pashmina	1975	41.00 Tonnes	1,00,000 00 per tonne	4 10	0 5
(b) Clipped hair	1969	4000 tonnes	6,000.00 per tonne	24.00	
(c) Tannery hair	1969	3000.00 tonnes	2,000.00 per tonne	6 00	
Total Value				6714 1	100.00

Advantages of Goat Rearing

Goat survives well under tropical conditions. With meagre investment even women and children can tend goats. By consuming agricultural by-products and shrub materials it converts efficiently waste into valuable products like meat, milk, manure, skin and hair. Its skin and hair constitute raw materials for the production of leather goods and druggets respectively.

The goats are reared for meat purposes in our country. Majority of the breeds (except Bengal, Sirohi and Barbari) are either of tall or medium size, the tallest being Jamnapari. The average dressed meat yield per animal in Tamil Nadu and Haryana was found to be 10.2 and 10.9 Kg. respectively. Goat meat is as much acceptable as any other choice meat. In view of the religious sentiment against the consumption of beaf and pork and restriction on cow slaughter, the demand for mutton from goat and sheep is steadily on the increase. In recent years, poultry and fisheries development programmes, no doubt, cotributed in a sizeable way to the total production of animal protein. But they have not reached a level to compete with mutton. They, at best, have served as supplements.

Milk

Goat is a "poor man's cow". Its milk has many advantages over cow's milk. It is nearer in composition to human milk than cow's milk. In addition, it is easier to digest richer in fat, protein, calcium and phosphorus and other solid contents except iron. It is alkaline in reaction.

Due to its non-allergic property, the goat's milk possesses medicinal and therapeutic value for chronic eczema, asthma and hay fever in children and also for peptic ulcers.

A good milking goat yields milk 10 to 15 times of its weight in a lacation period of 200 to 250 days. It can produce proportionally more milk than cow for the same quantity of fodder. For every 140 pounds of common concentrate mixture goat produces two gallons more milk than cow. The annual production of milk in India is given in Table II.

TABLE II

Annual Production of Milk in India

('000 tonnes)

	1971-72	% Share
Cow's Milk	7,085	33 5
Buffalo's Milk	13,498	63.7
Goat's Milk	588	2.8
Total	21,171	100.0

Though goat's milk is valuable and superior to cow's milk, its commercial exploitation is not significant in our country This may be due to its odour and low per capita yield. The unpleasant odour can be eliminated by hygienically housing and milking of animals and cooling of milk. Segregation of milch goats from the bucks and destroying the musk glands also have proved effective in eliminating bad odour of goat's milk.

Goat Manure

Farmyard manure is an important input to raise the fertility of the fields. Small and marginal farmers who do not have adequate purchasing power to buy

chemical fertilisers depend mostly on this sousce. Penning of goats during nights in the vacant agricultural lands is widely practised to enrich the soil. Goat manure is often preferred for the garden and commercial crops. According to an estimate about 340 million tonnes of goat manure is produced in India. By adopting intensive rearing practice and stall-feeding, the supply of goat manure can be effectively mobilised and augmented.

Skins

Goat skin is an indispensable raw material for the leather industry. The 'Kustia' goat skin of Bengal is famous for its leather-making properties. Goat skin leather is extensively used for making quality shoe uppers for ladies and children's footwears, gloves, garments and other leathergoods. By producing 40 to 45 million skins valued at Rs. 1720 million annually, India occupies the first place in the world. In 1978-79, processed goatskins valued at Rs. 1712 million were exported from India.

Hair

Pelts, coarse blankets, carpets, ropes, sacks and brushes are the various products made out of goat's hair. About 4000 tonnes of clipped hair and 3000 tonnes of tannery hair are annually recovered and exported to earn Rs. 20 million (1977-78). About 41 tonnes of "pashmina" goat hair is recovered annually and used for making costly shawls and clothing.

Export of Live Goats and Meat

During 1977-78 about 0.12 million live goats valued at Rs. 27.8 million and meat valued at Rs. 54.6 million were exported.

Reproductive performance

Compared to cow, buffalo and sheep goat multiplies at a faster rate. The gestation period of goat is 150 days which is shorter when compared to that of cow or buffalo.

Twinning and two kiddings in a year are quite common among goats. Black Bengal, one of the major varieties in the country accounts for the births of 22 per cent single kids, 54 per cent twins, 21 per cent triplets and 3 per cent quadruplets in the total births. In the case of 'Malbar Goat', the proportion of twins and triplet births increased from 19 per cent in first kidding to 79 per cent in the second and subsequent kiddings. Yet, Indian goats have less reproductive capacity compared to some exotic breeds. This can be improved by cross-breeding of some selective local breeds with especially those from other tropical zones of Asia, Africa and America. The recent decision to set up a national institute for goat breeding near Mathura (U.P.) is a step in the right direction.

It is gratifying to learn that contrary to the stand taken by the National Commission on Agriculture, Government of India has recently realised the importance of goat farming and prepared a specific development programme. Under this programme a unit consisting of 20 nannies and one buck will be given to the marginal farmers at a subsidy ranging between 25 to 33 per cent of the cost.

The damages done by goat to crop and forest through its browsing habits can be overcome by developing stall-fed animals and controlled grazing.

Bucks of goat will be supplied to farmers in the tribal areas of Rajasthan and Himachal Pradesh to upgrade the local breeds of goat. The following programmes have also been approved for implementation during the sixth plan :

(a) Establishment of large goat farms in North Eastern Region for the production of cross-bred bucks;

(b) All North Eastern States to replace sheep farms by goat farms;

(c) Establishment of a goat farm in U.P. for multiplication of Jamnapari breed.

(d) Establishment of one large goat farm of exotic breeds in Jammu and Kashmir.

(e) Six out of 13 sheep farms in Maharashtra to maintain goats.

(f) Production of dairy goat through cross breeding in Rajasthan.

Despite all the advantages the goat is looked upon as an enemy of farm and forest because of its browsing habits. It destroys agricultural crops and is responsible for deforestation and the resultant soil erosion. But these problems can be got over by such scientific management techniques as development of stall-fed animals and controlled grazing. With the solution of these problems goat will have an edge over cow or sheep because of its adaptability to different environments and feeds. In view of its economic value and utility goat rearing continues to be an important avocation in rural India. □

Mass Communication Problem

(contd from page 12)

found this cooperation between developing countries extremely useful and would like to see it greatly expanded.

Similarly, the activities and programmes of our Film and Television Institute at Pune have an excellent potential for cooperation amongst all of us. Every year trainees from Afro-Asian countries have been joining the courses there and helping the exchange of creative ideas.

My delegation has submitted a resolution proposing that this institute be granted the status of a regional institute for the implementation of the programmes and projects of UNESCO as a regional centre of training. I hope the Commission will endorse this proposal.

My delegation attaches particular importance to the establishment of the Inter-Governmental Council on Communication Development and to the Information Programme for the Development of Information Communications proposed to be undertaken by UNESCO. We will be deeply interested in the activities of the Council and the Programme. □

Special Article

The Sixth Plan Framework-An Assessment

C.H. Hanumantha Rao*

THE FRAMEWORK of the Sixth Five Year Plan, released by the Planning Commission recently, has to be understood in the light of the emerging ecoomic situation in the country. In the early years of Planing in India, shortage of food, savings and foreign exchange were considered to be the three major constraints to growth. Thanks to the infrastructure built in the country in the course of the last 30 years in consonance with the startegy of import-substitution and self-reliant growth, we are now self-sufficient in foodgrains, the saving rate has risen to a level comparable to that in the middle-income and high-income countries, and foreign exchage is no longer as serious a constraint as it used to be in the early years of planning.

However, despite these achievements, the long-term rate of growth has been only about 3.5 per cent per annum, reflecting a steep rise in the incremental capital-output ratio. This growth has been associated with a high rate of inflation, particularly in the 70s. There is evidence to suggest that the inequalities in income have increased both in the rural and the urban sectors, and among different regions. The proportion of people below the poverty line to the total population has, at best, remained constant implying an increase in the absolute number of those below the poverty line. The significant rise in savings, both financial and physical, is attributable essentially to the adverse distribution of income brought about by capital-intensive growth and recurring inflation. Thus, slow growth, extreme inefficiency in the use of the available resources, inflation and poverty are the major problems facing the economy.

The Framework of the Sixth Five Year Plan sets out the target of annual growth rate at 5 per cent. There are also indications that a higher rate of growth of 5.3 per cent may become feasible. The lower rate of growth 4.7 per cent envisaged in the Draft Sixth Plan was based on the experience in regard to the growth achieved in the past as well as the steep rise in the capital-output ratio. It is widely admitted that a good part of the rise in capital output ratio is attributable to inefficiencies such as the delays in the execution of projects and under-utilisation of capacities created. It is also widely recognised that part of the rise in capital-output ratio has resulted from the adoption of capital-intensive techniques even when labour-intensive techniques were possible. Tentative calculations suggest that it should be possible to step up the rate of growth from 4.7 per cent to 5.0 per cent with the same base by merely reducing the capital-output ratio marginally from 4.85 to 4.56 i.e. by 6 per cent.

Since the Framework explicitly states that one of the objectives is to promote efficiency in the use of resources and improve productivity, it would not be unrealistic to opt for a higher rate of growth, say, 5.3 per cent per annum. There is, however, no indication either from the Draft Sixth Plan or from the Framework as to what part of the recent rise in capital-output ratio can be attributed to pure efficiency factors and what part arises from technological imperatives. Such exercises are essential in view of the explicit objective regarding the efficient use of resources. The latter objective is very much called for in view of sizeable investments made in the economy during the last 30 years and the significant prospects for increasing output as well as investable resources by eliminating gross inefficiencies.

Growth targets close to the historical growth rates negate the very logic and objectives of planning. It can be agreed that the targets should not be beyond the feasible rates as, such a course would imply the inevitability of short falls in achievements in relation to targets set and would, therefore, increase the credibility gap. However, it should be recognised that there is a clear relationship between the sights set and the mobilisation of effort, and that there is usually a gap between the mobilisation of effort and actual achievements. Therefore, growth targets significantly lower than the feasible ones could lead to even lower achievements than in the past.

Energy Problem

The Framework lays adequate emphasis on the exploitation of indigenous energy sources and the economy in the consumption of energy. In regard to mobilisation of additional resources, the Framework rightly lays emphasis on reducing subsidies which have been mounting in the economy and charging economic prices for scarce and strategic inputs. The decision taken by the Government of India in June 1980, to reduce the net burden of fertilizers subsidy by Rs. 2,100 crore is an evidence of this emerging outlook. There is also a welcome emphasis on the improvement in collections of the existing levies.

Thus, one would commend the Framework for setting the sights high in regard to the rate of growth of economy, for laying adequate emphasis on efficiency in the use of available resources as well as in the mobilisation of additional resources and for its emphasis

*Professor, Institute of Economic Growth, University of Delhi

on the strategy of self-reliance including particularly the exploitation of indigenous energy resources. However, one does not get an equally encouraging picture from the Framework in regard to the strategy for the reduction of poverty and inflation and the expansion of domestic market for self-sustaining growth.

Poverty, inflation and domestic absorptive capacity are highly inter-related. Removal of poverty does form a major component of programme thrusts during the Sixth Plan as outlined in the Framework. However, there is no indication even in broad terms as to the order of reduction envisaged in poverty and unemployment. More fundametally, one needs greater clarity in regard to the nature and the magnitude of the poverty problem and the strategies to alleviate it. The Fifth Plan had focussed on the objective of removal of poverty without indicating the employment targets and other measures to generate necessary income for the poor. The Draft Sixth Five Year Plan, on the other hand, focussed on eliminating unemployment without translating the employment targets into income generation for those below the poverty line.

Employment

Elimination of unemployment would solve only a part of the poverty problem. For one thing, the sizeable proportion of the unemployed consist of the non-poor and the strategy focussing exclusively on the elimination of unemployment may even lead to an increase in income inequalities including regional inequalities. On the other hand, even full employment of all the poor at the existing wage rates and productivity would only touch a fringe of the problem because the problem of poverty in India is essentially one of raising productivity in the existing as well as new occupations for the poor. Therefore, any strategy for the removal of poverty has to clearly identify the magnitude of the problem at a disaggregated level in relation to the incidence of unemployment and regional disparities in development. The Framework does state as one of its main objectives, "a progressive reduction in regional inequalities in the pace of development and in the diffusion of technological benefits." However, one does not find a clear reflection of this in the strategy for growth and removal of poverty except for discussion of the special programmes for backward areas such as desert and hill areas.

The proposed National Rural Employment Programme (NREP) has to be integrated with the programmes for regional development and removal of poverty in such a way that the former results in supplementing the incomes of the poor rather than merely drawing them away from the existing occupations characterized by lower productivity and wages.

It is also important to ensure that the benefits from capital construction through such programmes accrue mainly to the poorer sections. This requires a proper choice of projects as well as their location. This may also necessitate physical delineation of the small and marginal farm sector through consolidation of holdings for such farmers as well as for all of them as a group. The establishment of various service cooperatives exclusively for such groups may become essential.

Price Stability

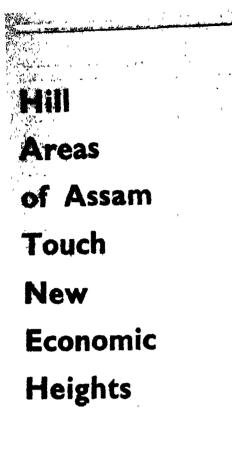
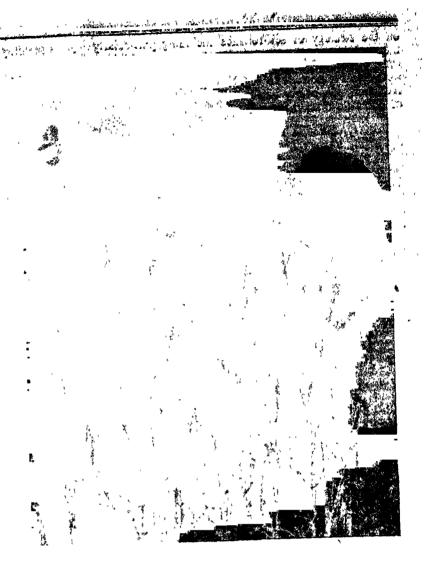
Relative price stability has always been an assumption behind Plan exercises. It is seldom treated as a serious objective determining Plan allocations and policies. Experience has shown that inflation has not only upset plan calculations frequently but also seriously undermined the objectives of growth and, especially, equity. It may be noted that whereas the Sixth Plan Framework has, for the first time, justifiably focussed on a large number of objectives, achievement of relative price stability is not listed as one of them. Provision of a national net work of public distribution system for essential commodities serving the poor in the rural as well as urban areas, especially in the high price zones, has to become a part of the planning process. This requires a proper policy for production, public procurement and stocking of essential commodities. The policies in this respect have so far been essentially producer-oriented and have probably been, on balance, inflationary. The framework rightly lays emphasis on the development of technology in regard to pulses and oilseeds but appropriate price for them, vis-a-vis cereals is by no means unimportant. Arresting the growth of parallel economy as well as unessential public expenditure and discouraging conspicuous consumption by the rich are relevant for achieving relative price stability.

The Framework does not explicitly mention the need to expand the domestic market and to increase the absorptive capacity within the system. The manner in which the export strategy is to be integrated with the objectives of growth and the removal of proverty is not convincing. For instance, the Framework states that "it should be our endeavour to give an export orientation to agriculture, after ensuring that the basic needs of our population for various food items are fully met. Full advantage should be taken of growing opportunities for international grain trade." Even with a rate of growth of 4 per cent in the output of foodgrains, given the population growth of 2 per cent per annum, the per capita availability of foodgrains can improve to the extent of only about 10 per cent in the next five years, which is hardly sufficient for making a dent on poverty and undernutrition. It would be paradoxical and an evidence of failure of policy, if a country committed to the removal of poverty begins to export foodgrains as a means of sustaining agricultural growth and prosperity among the affluent segments. Self-reliance, in its fundamental of sense implies a self-sustained growth rather than export-oriented growth. Internal absorption of foodgrains, skills, labour and equipment is quite feasible for a large developing country like India. □

Sixth Plan and Annual Plan of Sikkim

SIKKIM will have the Sixth Five Year Plan with an outlay of Rs. 121.82 crore. The outlay on the Annual Plan 1981-82 of the State has been fixed at Rs. 23.13 crore.

The Sixth Plan of the State is aimed at achieving inter-alia self-sufficiency in foodgrains, development of education, transport and urban water supply and upliftment in the quality of life of the rural poor. The Chief Minister has assured that the on-going Rimbi, Ronginchu, Rothak power generation schemes will be completed expediously.

Hill Areas of Assam Touch New Economic Heights

Pradip Kumar Gogoi*

Harvesting in Assam

THE HILL AREAS of Assam consist of two hill districts namely, Karbi Anglong and North Cachar Hills. The United Mikir and North Cachar Hills district (now two separate districts) came into existence in 1951. The United Mikir and North Cachar Hills district was bifurcated into two districts namely Mikir Hills and North Cachar Hills in February 1970. The Mikir Hills district has been renamed as Karbi Anglong in October 1976. In order to bring about all-round economic development of the newly created districts, two District Councils (the autonomous representative bodies of the people) were formed. Since their inception, the District Councils have been rendering selfless service to the tribal people for solving various economic and social problems.

For efficient functioning of administration and rapid economic development of the hill areas more powers have been delegated to the District Councils since June 1970.

According to 1971 census, 3,79,310 people were living in Karbi Anglong district and 76,047 in North Cachar Hill district. Majority of the people of Karbi Anglong are the Karbis. Mostly Dimasas live in North Cachar Hills district. Besides these tribes, other tribal and non-tribal people are also found in this region. During the decade 1961 to 1971, the growth rates of population in the district of Karbi Anglong and N.C. Hills was 68.3 per cent and 40 per cent respectively. It is noteworthy that the growth rate of tribal population in the districts of Karbi Anglong and N. C. Hills during the decade was only 24.9 per cent and 21.7 per cent respectively. On the other hand the growth rate of population of the State as a whole during the decade was 34.95 per cent. It is evident from the data of district census Hand Book that the higher growth rate of population during the decade was only due to heavy influx of outsiders.

The tribal people of the hill areas of Assam traditionally practise Jhum cultivation. About 65 per cent of the people in Karbi Anglong and 83 per cent in the N. C. Hills depend on Jhum method of cultivation and it is the mainstay of the people. The methods of cultivation and implements used are primitive. The dry and rocky portions of the hillocks

*Inspector f Statis ics, Government of Assam.

are exposed to wind and rain due to large scale denudation of forests. The unprotected surface soils of the Jhum fields are washed away by the rain waters. The hill streams carry the rocky soil into the rivers in the plain areas and thus raise the river beds and cause heavy flood in the plains.

In order to check traditional Jhum cultivation and to help prevent soil erosion on the hilly portions, the Department of soil conservation of the Government of Assam has been adopting practical measures since the second five year Plan. Cash crop plantations like coffee, rubber, black pepper, ginger, pineapple, banana etc. have been introduced on the hill slopes on experimental basis as an alternative to Jhum. The department also laid stress on the terraced cultivation. The District councils of Karbi Anglong and N. C. Hills have played active roles for checking and discouraging Jhum. In order to rehabilitate the tribals in the plain areas of the districts, the District councils alloted plots of land and permanent house sites to Jhumiyas with adequate facilities of drinking water and schools for their children.

In order to check traditional jhum cultivation and to help prevent soil erosion on the hily portions, the Department of Soil Conservation of the Government of Assam has been adopting practical measures since the Second Five Year Plan.

The Assam Plantation Crops Development Corporation Ltd. was set up at the beginning of the fifth Plan. The Corporation undertook plantation of coffee and rubber in extensive areas of the districts. According to the experts of the Coffee and the Rubber Boards of India, the climate and the soil of the hill areas are suitable for luxuriant growth of these crops. The Corporation has already started five estates of coffee and six estates of rubber in the district of Karbi N C. Hills. The total area of 16 estates under coffee and rubber is 1,650 Bighas and 1,500 Bighas respectively. The Corporation prepared a scheme for taking 4,080 hectares under coffee and 3.900 hectares under rubber during the fifth and the sixth Plan periods

The principal crops grown in the hill areas are paddy, maize, rapeseed and mustard, cotton, jute, sugarcane, potato etc. The total area of land under food grain crops in Karbi Anglong and N. C. Hills stood at 99,000 hectares and 15,000 hectares respectively during 1975-76.

Irrigation

During the third five year plan three medium irrigation schemes had been undertaken in the district of Karbi Anglong. The are Langparpan irrigation scheme, Jamuna irrigation scheme and Patradisa irrigation scheme. They were completed in 1965-66, 1969 and 1968-69 respectively.

The Haraguti irrigation scheme of the district of Karbi Anglong had been undertaken during the annual plans (1966-69) period and the project was completed during 1974-75.

During the fourth five year Plan period five minor irrigation schemes namely Kheroni, Dillai, Dikhari, Harina and Kalanga had been undertaken in the district of Karbi Anglong. The total irrigation potential created at the end of the plan was 6939 hectares in the district. The cummulative achievement under minor irrigation schemes was of the order of 3,941 hectares by the end of the Plan.

In the district of N. C. Hills two medium irrigation schemes had been undertaken and the construction works completed during the fourth five year plan. The total irrigation potential in the district stood at 2,051 hectares at the end of the plan.

During the first three years of the fifth Plan periods, the total irrigaion potential created under minor irrigation in Karbi Anglong and N. C. Hills were 2,130 hectares and 2,145 hectares respectively.

Industry

In the first year of the second five year Plan a cotton ginning mill under the co-operative sector based on cotton available in Karbi Anglong district had been set up at Diphu. But unfortunately this mill had been closed down in 1957-58 due to shortage of working capital and lack of marketing facilities for the finished products.

During the third five year Plan and annual Plans only a few small industries had been set up in the hill areas of Assam. On account of the bottlenecks of transport and communications, the developmental plans could not be properly implemented in the hill areas of Assam.

A cement factory under the central sector, based on limestone available in Karbi Anglong, was set up at Bokajan during the fourth five year Plan. The factory went into production in 1976. The total production of cement in the factory stood at 83,193 metric tonnes during 1977. During the plan period, an amount of Rs. 56.28 lakhs was spent for the growth of a few small scale industries including a Lime Plant a Bobbin factory and a number of saw mills in the district of Karbi Anglong.

A Dairy farm at Garampani and an oil mill at Maibong in the district of N.C. Hills were set up during the last year of the fourth five year Plan. An amount of Rs. 70 lakh was allotted for the development of cottage industries in the hill districts of Assam, and Rs. 53.98 lakh were actually spent.

In the current Sixth Five Year Plan, a scheme has been chalked out for the construction of about 620 kilometres of new link roads in the rural areas.

During the **fifth Plan period,** the Assam Industrial Development Corporation Ltd., which came into existence in 1968 decided to set up a starch and glucose plant at Bokajan in the district of Karbi Anglong, as the district alone produces 6,000 tonnes of Maize annually against the total annual production of 15,000 tonnes in Assam.

The Hill Industries Development Corporation Ltd., which came into existence in 1968 with the principal objective of setting up of small scale industries in the hill areas of Assam, decided to set up a Fruit Preservation Centre at Jatinga and a Khandasari Sugar Mill at Maibong in the district of N. C. Hills

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during the fifth plan periods. The Corporation had already set up a Khandsari Sugar Mill at Manja in the district of Karbi Anglong. The production of Khandsari sugar was started during the crushing season 1975-76.

It was under active consideration of the Assam Industrial Development Corporation (AIDC) to establish a Cement plant and a paper-pulp project in the district of N.C. Hills during the fifth plan period. The production capacity of the proposed cement plant at Garampani would be about 600 MT per day. An amount of Rs. 418 lakh was allotted for development of medium industries and Rs. 130 lakh for cottage and small scale industries in the hill areas of Assam.

The AIDC has decided to set up a Rubber plant at Diphu in the district of Karbi Anglong based on the plantation of rubber in extensive areas of the two hill districts. Different types of rubber products including tyres and tubes, vee belts, industrial 'O'-rings etc. will be produced by the project. The production capacity of this proposed plant would be 200 MT per year. The total investment of the plant is estimated at Rs. 21 lakhs.

It is evident from the fact that there is only one high school in an area of 115 square miles, one middle school in 55 square miles and one primary school in 6 square miles. It is a matter of great surprise that there is only one girls high school in the hill areas of Assam.

According to the Annual Survey of Industries conducted by the Department of Economics and Statistics, Government of Assam, the total number of registered factories in the districts of Karbi Anglong and N.C. Hills were only 29 and 2 respectively during 1976. These facts and figures of the survey have proved the industrial backwardness of the hill areas of Assam.

Hydro-Power

During the fifth Plan, the Central Power Authority approved a scheme for the construction of a mini hydel project at Bardikharu in the district of Karbi Anglong. The project is now under construction and expected to be completed by April, 1981 at an estimated cost of Rs. 98 lakh. The project having an installed capacity of 1.5 MW will have scope for expansion to 2 MW in the final stage. It is expected that the project will meet at least a certain amount of power requirements of the district.

The construction of the Kapili Hydro-electric project of the district of N.C. Hills is expected to be completed during the current sixth plan period. The total installed capacity of the project is estimated at 350 MW.

Transport

The transport and communication systems of the hill areas are under-developed in comparison to the plain districts of Assam. So the industrial development is not up to the mark inspite of having abundant raw-material and native potentialities of growth.

During the first three plans period, about 580 Kms. of motorable roads, 499 Kms. of fair weather roads and 578 Kms. of village roads had been constructed in the two hill districts.

Total length of National Highway in the hill areas stood at only 70 Kms. during the second five year Plan. The length of National Highways in the district of Sibsagar was 241 Kms. During the plan period the total length of roads under PWD in the hill areas stood at 1,248 Kms.

Some minor forest roads had been constructed by the State forest department as link roads to transport logs and other forest resources.

During the fourth five year Plan, a scheme had been undertaken for the construction of two new roads in the district of Karbi Anglong and three, in the district of N.C. Hills. The total length of roads in the hill areas at the end of the plan stood at 2,000 Kms. The Lumding-Diphu-Golaghat route was nationalised. About 125 Kms. of roads were constructed by the State Government and the District Councils at a cost of Rs. 16.32 lakhs during the fourth five year Plan.

The fifth Plan laid emphasis on the construction and development of 552 Kms. of road in Karbi Anglong and 741 Kms. in the district of N.C. Hills. The Transport Corporation provided transport services on 622 Kms. of roads in the hill areas of Assam. During the plan period the Haflong-Garampani Road and the Haflong-Tamenglong Road in the district of N.C. Hills were completed.

In the current sixth five year Plan, a scheme has been chalked out for the construction of about 620 Kms of new link roads in the rural areas.

The hill areas of Assam are regarded as fortunate from the point of view of railway communications. The total length of railways in the two hill districts stood at 402 Kms. during the second five year Plan. The railway lines passing through the districts of united Mikir and N.C. Hills were the longest among the districts of Assam.

The transport and communication systems of the hill areas are underdeveloped in comparision to the plain districts of Assam. So the industrial development is not up to the mark inspite of having abundant raw material and native potentialities of growth.

The main line of the N.F. Railway connects Diphu, the headquarters of Karbi Anglong and the Lumding-Cachar line of the Hill Section connects Haflong the headquarters of N.C. Hills with other places of the state. Diphu and Bokajan are the two important railway stations in the district of Karbi Anglong, while Maibong, Mahar and Haflong are the important railway stations in the district of N.C. Hills.

Education

The people in hill areas of Assam are educationally very backward. According to the 1971 census the percentage of literacy in the district of Karbi Anglong and N.C. Hills, stood at 19.17 and 27.25 per cent respectively.

Umtiu Dam

During the first Plan period, the number of primary schools was less than 100, middle schools not over 12 and there was no high school at all. During the first and the second five year plans 97 primary schools were established. A Primary Education Board at the district level was constituted in 1961-62. At the end of the first five year plan there were 380 primary schools, 25 middle schools and a high school in the two hill districts of Assam.

During the second five year Plan a high school at Diphu in the district of Karbi Anglong and a college at Haflong in the district of N.C. Hills were established. At the end of the plan, there were 360 primary schools, 29 middle schools and 8 high schools in the Karbi Anglong district.

The Industrial Training Institute of the district of Karbi Anglong was set up at Diphu during the third five year Plan. The Hindi Training Centre of Missamari in the district of Darrang was shifted to Diphu. At the end of the third five year Plan a College was set up at Diphu.

There were 540 primary schools, 57 middle schools and 16 high schools in the district of Karbi Anglong, and 266 primary schools 20 middle schools and 6 high schools in the district of N.C. Hills at the beginning of the fourth five year Plan.

During the fifth Plan period the number of primary, middle and high schools in the district of Karbi Anglong had been increased to 744, 83 and 40 respectively and the number of such schools in the district of N.C. Hills stood at 401, 29 and 16 respectively.

Though education has spread in the hill areas, the ratio of number of educational institutions to the population is not up to the mark. It is eviden from the fact that there is only one high school i an area of 115 square miles, one middle school ir 55 square miles and one primary school in 6 squar miles. It is a matter of great surprise that there is only one Girls High School in the hill areas o Assam.

Community Development

The Tribal Development Blocks have been organised in order to wipe out poverty and economic backwardness of the tribal people, to remove bottleneck in transport and communications, to bring abou development of agriculture, industry, animal husbandr and fishery and to extend the public health service in the hill areas of Assam. During the first pla period, the Tribal Development Blocks of Bokajan Howraghat and Rong Khang in the district o Karbi Anglong and the Diyung Valley T.D. Blocks N.C. Hills had been set up. The three T.D. Block of Karbi Anglong covered about 789 villages an the Diyung Valley T.D. Blocks had 181 village under its jurisdiction.

The second Plan witnessed the establishment o the Amri T.D. Block of Karbi Anglong and th Jatinga Valley T.D. Block of N.C. Hills, whicl covered 184 and 170 villages respectively. The T.D Blocks of Nilip, Lumbajung and Sochang were se up during the third five year Plan, covering 226, 28 and 85 villages respectively.

On account of the untiring efforts and proper initiative of the Tribal Development Blocks, a good number of tribal cultivators have given up their age old practice of jhum and have taken to permanent wet cultivation in the plain areas of the two hill districts of Assam. At present the tribal cultivators particularly round about the blocks have been able to increase agricultural production by introducing improved agricultural implements, high yielding seeds, fertilizers and pesticides etc.

The TD Blocks established primary schools and text books were supplied free of cost to the children. The enrolment of students in the primary schools is gradually increasing.

The T.D. Blocks have played active role in the construction of village roads. The villagers were also encouraged to take up different cottage industries, to form co-operative societies take to pisciculture. Animal husbandry and veterinary facilities were also provided. Provision of drinking water facilities has been extended by sinking wells and tube wells.

Raw Materials

Among the important forest resources mention may be made of valuable species of timber like Sandal wood (Agar wood), Teak, Poma, Titachapa, Banchom, Paroli, Ajar, Simalu etc., different varieties of Cane and Bamboo, Lac, Dhuna, Patidoi, Sand, Gravel, Boulders, Medicinal herbs, etc. The Agricultural raw materials are cotton, jute, mesta, sugar cane, rape and mustard, sesamum, linseed etc. The state has rich deposits of coal limestone, kaolin, silliminate. pink gramite and base metal etc.

The Department of Geology and Mining, Assam has estimated that the availability of limestone is to the tune of 29 million tonnes and 30 million tonnes in the district of Karbi Anglong and N.C. Hills respectively. The limestone of the hill areas of Assam is of superior quality for manufacture of cement.

Finance for Development

In the first, second and the third five year Plan period about Rs. 313.02 lakh, Rs. 540.25 lakh and Rs. 668.45 lakh had been spent for the development of hill areas of Assam. During the fourth five year Plan a sum of Rs. 18.31 crore had been spent for the welfare of the Tribal people.

About Rs. 63.29 crores had been allotted in the fifth Plan. The Integrated Hill Plan for hill areas of Assam had been executed by the Government during 1966-67. In this plan more emphasis had been placed on economic development of the hill areas. The sectors which were given top priority were agriculture, transport, communications and social Welfare.

During the fourth Plan periods, a separate sub-Plan for the hill areas had been prepared. A Hill Planning Board had been constituted for proper implementation of the plan. The total expenditure during the plan periods stood at Rs. 1,87.09 lakh.

Under the SFDA introduced in the district of Karbi Anglong along with Kamrup, Nowgong and Goalpara districts of Assam, about 11,133 small farmers, 8,322 marginal farmers and 10,671 agricultural labourers have been identified in the district of Karbi Anglong. Ten minor irrigation schemes, sixteen rural roads and a dairy farm had been completed under the S.F.D.A. programme.

During 1980-81, the SFDA, Diphu has supplied 13 tractors one each to 13 Co-operative societies in the district. Besides this, the Agency has also supplied 80 pairs of plough bullocks, 15 units of milch cows (three cows per unit) 19 units of goatery (six goats per unit) 12 units of piggery (three pigs per unit) for economic uplift of the tribal families of the district of Karbi Anglong. In addition to this, training facilities have been extended to the cultivators on different subjects like animal husbandry, be keeping and cottage industry etc. □

Standardisation in India

(*Contd. from Cover II*)

instance, a National Building Code which spells out the optimum economic use of money and material. Again, a steel economy project undertaken by ISI is estimated to have saved steel utilisation by as much as 23 per cent in a variety of projects. Perhaps the most impressive achievement of the ISI was to bring about the changeover from the imperial to the metric system in the fifties. The changeover involved, firstly, the very highly complicated task of conversion and secondly the even more arduous job of educating public to understand and accept the new metric system. It needs to be noted that countries like the UK, Australia and New Zealand which took to the metric system much later profited considerably by the Indian exprerience.

Although the ISI is a governmental organisation, it is an autonomous body both in respect of its institutional character and its operational functions. Initially, for instance, more than 90 per cent of its budget was met from governmental sources. Today a bare 18 per cent of its Rs. 420 lakh budget comes from the Government. The rest is earned by the ISI by sale of certification marks and of its standard specification codes.

The extent to which it has achieved its autonomy is a reflection of the growth of standards consciousness in the conomic community. Considering, however, that the value of goods covered by ISI is only Rs. 16,000 crore of a gross domestic product, which is several times more than this the growth of standardisation appears to have a long way yet to go. But this can come about only when standards consciousness develops voluntarily as consumer consiousness grows.

(*Courtesy All India Radio*)

SETWIN—an Experiment in Self-Employment

A. K. Rajula Devi*

A SOCIETY for Employment Promotion and Training, SETWIN, in the twin cities of Hyderabad and Secunderabad in Andhra Pradesh was formed in November 1978, with the following objectives :

(a) Training in "Demand-based" skills aimed at improving the skills of unemployed and thus improving the chances of their employment.

(b) Training-cum-employment programme under which educated unemployed are given training in large and medium scale industries for ultimate absorption on completion of training.

(c) Training-cum-production schemes in labour-intensive production centres run by SETWIN with the objective of training unskilled persons in single production lines and providing them direct employment as piece-wage earners.

(d) Training-cum-employment under which "Reorientation Training" is organised and necessary facilities are provided for self-employment to educated unemployed. Under this programme schemes like functional complexes in collaboration with A.P. State Small Industries Development Corporation (APSSIDC) ; "Special Passenger Bus Scheme" in collaboration with A.P. State Road Transport Corporation (APSRTC), Mini Bus Programme and "SETWIN Home Service" are being implemented, and

(e) Anti-poverty programme to improve the economic condition of the poverty-stricken families, identification of employable skills and provision of appropriate assets. Finances are arranged through Banks under DIR Scheme.

Performance

During 1979-80 as many as 2,294 unemployed persons benefitted under different schemes implemented by the SETWIN at a cost of Rs. 92.37 lakhs. As against the expenditure of Rs. 92.37 lakhs the Industries Department provided a sum of Rs. 22.35 lakhs as grants-in-aid for continuing the centres of erstwhile employment schemes. A sum of Rs. 36.40 lakhs was released by Government under special employment schemes for conducting training schemes in demand-based skills including SETWIN Home Service training-cum-employment Programmes like special Passenger Bus Scheme, Mini Bus Programme, Functional Complexes etc.

* Research Associate, Faculty of Rural Industries and Employment, National Institute of Rural Development, Hyderabad.

Training Programmes

The training programmes of SETWIN cover trades ranging from typewriting to tailoring, printing technology, watch repairing, plumbing, electronic data processing, computer programming, card punching and the manufacture of tube lights and leather garments. The training is imparted either by the staff of the SETWIN or organised by it by utilising the facilities available in the State and Central Government organisations or private agencies.

Home Service

SETWIN'S Home Service provides not only gainful self-employment to groups of unemployed skilled technicians and bill collectors but also provides prompt home service to the citizens in plumbing, carpentry etc.

Under this programme groups of skilled technicians like plumbers, carpenters, electricians, radio and T.V. mechanics, refrigeration and air-conditioning mechanics and bill collectors operate from Home Service Booths located at various focal points in the city. The booths are equipped with public call telephones to receive orders from the customers.

During the gestation period of 6 months the technicians and bill collectors are paid a subsistence grant of Rs. 200 p.m. for enabling them to support themselves before the service builds up its own clientele.

During 1979-80, the actual expenditure on this scheme was Rs. 3,76,143.

Pre-Society Production Centres

Following the setting up of SETWIN in November, 1978, the production centres of erstwhile employment schemes engaged in the making of envelopes, file-pads, file-tags, chalk crayon, corrugated and board boxes, dongries, socks and hosetops, bandage and gauge cloth together with a printing press were transferred to SETWIN. During 1979-80 these centres ran on a no-profit-no-loss basis, providing employment on a piece wage basis to 1,000 workers.

Margin Money Distribution

Under Self-employment Schemes implemented by Industries Department, SETWIN is entrusted with disbursement of margin money loans to entrepreneurs. An amount of Rs. 18.6 lakhs relating to 1978-79 and Rs. 30 lakhs for the year 1979-80 were placed at the disposal of SETWIN by the Industries Department. The entire amount has been disbursed to the entrepreneurs through the financing institutions.

Laundry Soap and Safety Matches

It has been proposed to set up 6 laundry soap making units, 6 safety matches making units and two

200 workers. The scheme envisages 100 per cent financial assistance from Andhra Pradesh Khadi and Village Industries Board. The intention behind the project is that after running the projects for 6 months under SETWIN's auspices, well-trained associations of workers would be formed and the units would be transferred to such associations for further maintenance.

Readymade Garments Units

During 1979-80 one ready-made garment making centre was established at a cost of Rs. 1,28,798 providing self-employment to 120 girls trained in SETWIN Tailoring Training Centres. The girls were trained for a period of 2 months for reorientation in making export variety garments.

Special Bus Programme

According to the scheme for each bus three entrepreneurs are provided. Out of them two are Heavy I.T.I. Motor Mechanics having knowledge of automobile engineering. The A. P. State Finance Corporation (APSFC) has provided 85 per cent of the cost of

15 per cent as margin money was paid by the Government. The Conductors for these services are being provided by APSRTC. The earnings realised on these buses will be remitted by these conductors in APSRTC depots and APSRTC in turn pays Rs. 2.25 per Kilometre towards special hire charges to SETWIN.

The repayment of loan with interest and other expenses like salaries of drivers/mechanics and the maintenance of vehicles etc. are being met from these hire charges by SETWIN on behalf of the entrepreneurs.

Mini Bus Programme

The scheme envisages provision of self-employment to two drivers and one mechanic per mini bus (in all 300 drivers and mechanics for 100 mini busues) on the basis of ultimate ownership of the buses by the group of entrepreneurs. The instant popularity and the utilitarian value of the scheme prompted SETWIN to sponsor 100 mini buses programme during the year 1979-80. Besides providing self-employment to 300 drivers and mechanics employment opportunities have been created for 200 conductors who belong to the weaker sections.

Electronic Exchanges

THE ELECTRONIC EXCHANGES to be introduced on the Delhi Telephones network will provide the following additional facilities :

Follow me Service : Some people want to be always available on telephone wherever they may be. The subscriber having this facility can put his telephone in transfer condition whereby incoming calls are routed by the electronic exchange to another preselected telephone situated anywhere and connected to any automatic exchange either in the national or in the international network.

Do not disturb feature : A subscriber wanting to be by himself may ask for telephone silence for an undisturbed dinner, peaceful family evening or in the office he may reserve sometime for a meeting or a creative thinking period. The 'do not disturb' service enables the subscriber to free himself from responsibilities of answering telephone without giving impression that his telephone station is deserted. Incoming calls are routed to a talking machine which will tell callers that the party is temporarily inaccessible.

Conference Calls : Subscribers can set up connections to several other subscribers and conduct conference calls with them ; the other parties involved can either be established prior to the call or connected while the call is in progress.

'Camp on busy' : Incoming calls to busy subscribers can be camped on until his telephone is free. A renewed connection set-up to the called party is not necessary. The calling party may either be assigned this feature for general use or dial it from his telephone prior to the call or on receiving the busy tone by dialling suffix.

Call waiting service : The call waiting service informs the subscriber whose telephone is busy that a third party is calling him. This is done by sending a tone while the conversation is on. The tone give him the choice of ignoring it or interrupting the connection to have a short conversation with the calling party. In both the cases he may pick up the original conversation as if nothing had intervened.

Automatic call back : Instead of 'camp on busy' a call can automatically be repeated. A party can replace his hand set after receiving the busy tone, after which a periodic check is carried out on the called party status. When the idle status is ascertained both parties are rung and the connection is set up.

Immediate billing : The subscriber can request for immediate billing for individual calls for a duration of a period. The call charge slip contains the numbers of the calling and the called parties, the date, time or day and charge. This feature can be asked for and cancelled by the subscrber himself by dialling a preset code. This service is very useful for hotels and restaurants who want immediate billing in case of long distance calls.

Absentee service : It is often seen that while you are waiting for an important business or private call, something always seems to happen which compels you to leave your place, even if only for a few moments What do you do ?

The electronic exchange provides a service in which you have to dial a pre-determined code to get access to absentee service facility. During the period of your absence the incoming calls are routed to an operator who will take down your message. You can get the message on return. In this way the electronic exchange offers the subscriber a part-time secretary. The service can be made effective or cancelled at any time

In Madhya Pradesh

Resources from Farm Sector

Dr. V. C. Sinha*

UNDER FIVE YEAR PLANS there has been a net outflow of public funds on revenue and capital account to the agricultural sector and this flow is continuously increasing. Credit has been diverted from non-agricultural to the agricultural sector by nationalised banks. A number of services are rendered by the Government to the agriculturists either free or at concessional rates. Distribution of improved seeds, fertilizers and pesticides, provision of rural pumpsets and rural electrification have been at one time or another, subsidized with a view to stimulate their use and increase agricultural production. Even though development strategy extended all these favours to the agriculturists no positive efforts have been made to extract surpluses from them.

The progress since 1967-68 leads one to believe that agriculture has at last achieved the much needed break-through in production. Since the real beneficiaries of green revolution are the well-to-do farmers, the problem of rural tax policy is largely one of obtaining some part of the increased incomes of the more prosperous agriculturists for the state revenues so that the facilities which have brought prosperity to the larger farmers could be made available widely, besides providing more amenities and services to the community in general. There would have been no harm in leaving a sizeable part of this surplus with the farmers themselves had they ploughed it back for productive investment. But past experience shows that agricultural prosperity meant an increase in transfer investment, hoarding of precious metals and wasteful consumption. Therefore, it becomes imperative to tax a substantial part of the rural surplus, otherwise it will be appropriated by landlords, money lenders, merchants and others who do not have the benefit of productive investment. The task of tax policy for economic development is to mobilize this surplus, divert it into productive channels and continuously enlarge its size. The most effective way of mobilization of economic surplus and stepping up capital formation is the diversion of resources from private consumption to public investment through agricultural taxation.

During the last 20 years, prices of agricultural products have steadily moved up. Thus agriculturists have benefitted due to the relatively greater rise in prices of agricultural products, and have increased their purchasing power which if unchecked may give impetus to inflationary pressure. Again, as the prices of agricultural products have been increasing, land revenue has come to constitute an even smaller percentage of money value of farm output than of output in real terms. The following table illustrates the decline in the importance of land revenue over years.

LAND REVENUE AS PERCENTAGE OF STATE TAXES AND STATE REVENUE RECEIPTS

	1957-58	1975-76
1. Land Revenue	43	8
2. Land Revenue as percentage of state revenue	17	2

Thus in the light of phenomenal increase in agricultural prices the rates of land revenue and agricultural income tax should be increased to secure additional resources to finance the plan. The Perspective Planning Division suggested the introduction of the surcharges on land revenues and new taxes on agricultural produces primarily with a view to mobilising domestic resources for economic development.

An increase in agricultural taxation is recommended for raising marketable surplus from the agricultural sector. Thus increasing agricultural productivity is a pre-requisite for the creation of surplus in agricultural sector, which can easily be syphoned off by the agricultural sectors. Agricultural taxation creates the supply of agricultural surplus so very essential for economic development. As Meier observes, "Taxation of agricultural sector may also serve as an important policy instrument in underdeveloped countries, the incentive and institutional use of taxation may be utilized to redirect agricultural production, encourage the more difficient use of the land, accomplish changes in land tenure, promote new productive investment in agriculture and stimulate movement of redundant labor from agriculture to non-agricultural employment." Prof. Kaldor gives clear expression to the idea when he writes : "The taxation of agriculture has a critical role to play in the acceleration to economic development since it is only the imposition of compulsory levies in the agricultural sector itself which enlarges the supply of savings for economic development". A tax in money will impel greater deliveries to the market and thus increase the marketable surplus, which has an important bearing on economic development. This would mean that the growers of food will instead of consuming it themselves, transfer it to the non-agricultural sector, which transfer is very much needed in the interest of stable economic growth.

The agricultural sector is under-taxed in a relative sense also i.e. in relation to the non-agricultural sector. Dr. E. T. Mathew estimated that in 1958-59, the agricultural sector paid 5.2 per cent of its net income by way of all taxes as against 7.5 per cent of the net income paid by the non-agricultural sector. The per capita tax on agricultural was Rs. 16.1 as against

* Head, School of studies in Business Economics, APS University, Rewa (M.P.).

Rs. 98.5 on the non-agricultural sector. The disparity has considerably widened since then. Mathew calculates the burden of individual taxes imposed on agriculture and concludes that Indian agriculture is under-taxed in an absolute sense, in a relative sense and in the context of the need for additional resources for economic development.

An exhaustive and clear analysis of tax incidence and tax burden of agricultural taxes has been worked out by Dr. Ved. P. Gandhi. According to him, in general, the agricultural sector has borne relatively less taxation over the years than non-agricultural sector. In 1951-52 agricultural sector contributed Rs. 200 crores by way of direct and indirect taxes, whereas the non-agricultural sector contributed Rs. 450 crores. Thus the ratio between the two sectors was 44:56. By 1968-69 the gap had widened, the agricultural sector contributed nearly Rs. 2700 crores, the ratio for the two sectors was 33 : 67. Thus during the period, the average tax in the agricultural sector, instead of rising, had actualy fallen.

A very interesting comparison has been made by Dr. Ved Gandhi between the marginal tax burdens of the upper and lower income groups in both agricultural and non-agricultural sectors. The marginal rate of taxation in the agricultural sector is 11.5 per cent but the marginal burden on the upper classes is only 7 per cent. Likewise, in the non-agricultural sector, the marginal burden of taxation is 20.6 per cent, but the marginal burden borne by the upper classes is 13 per cent.

The rural households with an annual income of over Rs. 5,000 pay only 6.6 per cent of their gross incomes as taxes whereas the urban households in the same income group are paying 9.8 per cent of their incomes as taxes. On equity considerations therefore, a strong case may be made out in favour of additional taxation on rural households with annual income above Rs. 5,000. What is true for India may be expected to be true for Madhya Pradesh also.

A very convincing argument for increasing agricultural taxation may be given from the side of savings. Mobilization of resources is needed to augment the rate of investment. It, therefore, becomes essential that domestic savings be stepped up continuously and progressively so as to increase investment and national income. We envisaged an average annual growth rate of 7 per cent which required the mobilisa-tion of domestic savings of the order of 11.5 per cent. But the estimated rate of savings was about 2.6 per cent for rural households and about 14 per cent for urban households giving an average savings rate of 5.8 per cent.

Naturally, if the domestic savings rates were to be accelerated, the main thrust would have to be on the rural sector and not on the corporate sector or the urban households. The most pertinent and crucial question is whether the rural people would be able to increase their voluntary savings substantially. As the answer would be in the negative, the only alternative to augment their savings is through compulsion, i.e. taxation. It is, in this context, that agricultural taxes have to play a crucial role in the country.

A large sector of the economy in rural areas [illegible] always been non-monetised and this has not be[illegible] affected by increasing income and commodity ta[illegible] tion. Thus the tax potential existing in this sec[illegible] can be used for development finance through [illegible] taxation of agriculture.

From the foregoing discussion, we may derive [illegible] following conclusions :—

(a) In general, the agricultural sector bears [illegible] less tax burden than the non-agricultu[illegible] sector.

(b) The upper income class of farmers ha[illegible] borne much less burden than the low income class of formers.

(c) There is a great scope for increase in ag[illegible] cultural taxation especially upon the we[illegible] to-do farmers who are the main participa[illegible] of green revolution in the country.

Now, when the agricultural sector is flourishi[illegible] State governments should tap this source for mobi[illegible] zing additional resources for economic developme[illegible] It is economically desirable for all the States of t[illegible] Indian Union to cooperate in building a healthy a[illegible] powerful India. Planning by collective action is ind[illegible] pensable if a country is to develop economically, [illegible] the right lines and at the desired speed.

The need of additional taxation of agricultu[illegible] sector has been established in this article. Accordin[illegible] their have been various attempts to suggest proposa[illegible] to raise agricultural taxation in recent past. The[illegible] tax proposals have broadly three objectves : (i) [illegible] provide an element of progression in agricultural ta[illegible] tion so as to make it more equitable (ii) to ecure a[illegible] ditional resources from agriculture and (iii) to provi[illegible] an incentive to raise agricultural output. In order [illegible] attain these objectives the Perspective Planning Di[illegible] sion has suggested the introduction of a progressi[illegible] surcharge on land revenue, a surcharge on the ar[illegible] under commercial crops, a purchase tax on comme[illegible] cial crops and a tax on livestock. Some economi[illegible] had suggested reduction in the exemption limit [illegible] agricultural income taxation of plantation as well [illegible] farm incomes, doubling of the present rate of ag[illegible] cultural income tax and above all evolving a meth[illegible] of "in kind" taxation. Others proposed that a speci[illegible] land tax on big land holders in addition to wea[illegible] tax should be introduced. However, the various pr[illegible] posals made for additional agricultural txation see[illegible] to be defective and impracticable. It is true, that th[illegible] may fetch some additional revenue to the Gover[illegible] ment but the cost of collection will be very hi[illegible] since the farmer assessees are widely scattered. Beside[illegible] if all of them are imposed together, the burden [illegible] the agricultural sector may exceed that on the no[illegible] agricultural sector.

The Union Government accepted Raj Committe[illegible] proposal to integrate agricultural and non-agricu[illegible] tural incomes for the purpose of calculating incon[illegible] tax. But the Raj Committee's major proposal of Ag[illegible] cultural Holding Tax (AHT) has been rejected by th[illegible] States. Thus the problem of mobilisation of addition[illegible] resource from the agricultural sector for purposes [illegible] development is yet to be solved successfully. □

A Case Study

Agricultural Finance in Malda District

K. C. Bose*

MALDA is an agricultural district of North Bengal with a total population of about 15 lakh out of which 70 per cent are farmers.

To meet the demand of agricultural credit for various operations, adequate finance is essential. To provide finance to the farmers, Cooperative Credit, Structure has been built up with a net-work of service Cooperative, the F.S.S. and Lamps organised in 15 Development Blocks of Malda under the direct guidance and control of Malda District Central Cooperative Bank Ltd.

The position of crop loan investment and collection which appeared very miserable in 1961-62, improved in 1966-67. But again deteriorated later on, till 1971-72. Some improvement was there during the period from 1972-73 to 1976-77 due to acceptance of some persuasive and legal measures and need based programme.

Nearly 565 service cooperatives were organised at random. But most of them were financially and organisationally weak. Then came the revitalisation scheme under the viability programme as per instructions and guidance of the Reserve Bank of India. This programme envisages the utility of minimising the number of service Cooperatives and categorising them into two classes viz. (i) Economically viable (ii) Potentially viable.

In accordance with this programme, the total number of viable and potentially viable societies came to nearly 355 in 1977-78 in Malda District. The investment through the service cooperatives for agricultural purposes did not register any improvement and in fact only 25 per cent was covered by the District Central Cooperative Bank in respect of investment and collection of crop loan for rural development.

Only 50 per cent of the credit needs have been satisfied by the joint efforts of all the banks. Even then the coverage of the agricultural population has not been satisfactory. On the other hand, with the growth of population, increase in price-index, production cost and rise in standard of living, elasticity of demand is in full operation which necessitates the launching of a broad-based programme of investment and collection to keep pace with the growing needs.

Development Activities

Besides the credit functions undertaken by the Commercial and rural banks, the following developmental activities have also been started.

The banks render technical assistance to the farmers for proper utilisation of the short and long term loans advanced by them.

The societies are also provided with the assistance for preparation and submission of financial proposals.

Training programmes have been conducted by these banks to enlighten managers etc. about cooperatives.

On experimental basis, goat rearing and dairy schemes have been introduced in the societies for subsidiary income of the members.

A substantial amount of interest is earned by the societies since they deposit the share capital in these banks by opening the fixed deposit Account.

A comprehensive action programme to increase the membership, share capital vis-a-vis non-credit business has been launched.

Although vigorous efforts have been made by the commercial rural and cooperative banks to satisfy the credit needs of the agriculturists of Malda through Cooperatives and also by individual farm financing the achievements are far from satisfactory.

To provide agriculture credit to the farmers, many service cooperatives were organised under the guidance of Malda District Central Cooperative Bank Ltd. but it covered only Twentyfive per cent of the farmers. The growth of population, and living costs necessitate launching of a broad based programme of investment.

Suggestions

The introspection into actual state of affairs calls for some suggestions for implementation to bring about a positive change in socio-economic structure of the rural people particularly the agriculturists.

The unhealthy competition of expanding the lending programme amongst all banks should be avoided as far as practicable. It should always be need based.

The area of operation of each bank should be clearly demarcated to avoid any overlapping.

Precautions should be taken to guard against the over financing.

Development schemes should be drawn up and investment should be made accordingly to enhance the internal resources and repaying capacity of the farmers.

A strong sense of co-ordination and co-operation should be promoted amongst all banking authorities and concerned District Cooperative Department of the State Government in order that the programme may be implemented in proper perspective.

Positive steps should be taken to ensure the collection of the crop loan and its reinvestment. The infrastructure should be built up and strengthened suitably.

(Continued on page 29)

*Lecturer, Cooperative Training College, Kalyani, Nadia.

Utilisation and Diversion of Farm Loans in Satna

Dr. R. S. Mishra, Dr. H. C. Jain and
V. K. Shrivastava*

KEEPING in view the importance of long term credit, a study was conducted in Satna District in Madhya Pradesh with a view to focus the attention on the very idea of helping the farmers and thereafter increasing the agricultural production, and to highlight the various difficulties involved in actual disbursement of long term credit.

In keeping with the objectives of this study, a representative sample of 25 borrowers was drawn from five selected villages in the district. The primary data were directly collected by the researcher himself, through personal interviews with the help of an interview schedule. The secondary data were collected from the bank records and reports. The data so obtained were analysed to determine the extent of uilisation and diversion of loans.

Results and Discussions

It was observed that in some cases of borrowing, the farmer-borrowers did not utilise the loans for recognised purposes, obtained from the Land Development Bank. The amount borrowed for a particular productive purpose was either diverted to other productive purpose or misused for unproductive purposes. Hence, this misutilisation of loans created a problem to both the parties i.e. loanee and lending institution at the time of repayment of loan to the bank. The amount obtained by he selected borrowers was Rs. 1,77,227. Of this Rs. 1,60,319 or 90.46 per cent was utilised for recognised purposes and Rs. 16,908 or 9.54 per cent was diverted to other unproductive and productive purposes. Of the total amount Rs. 8,550 or 4.82 per cent was diverted to productive purposes in agriculture and allied fields and Rs. 8,358 or 4 72 per cent was misutilised for non-productive uses.

The amount borrowed by the medium category of farmers was 38.64 per cent of total borrowing, of which 83.61 per cent was utilised for recognised purposes, and remaining 16.39 per cent was diverted to other purposes. Similarly the amount borrowed by big farmers was 61.36 per cent of total borrowing, of which 94.77 per cent was used for purposes for which it was taken and remaining 5.23 per cent was misused or diverted to other purposes.

* Deptt. of Agricultural Economics, J.N. Krishi Vishwa Vidyalaya, Jabalpur.

The total amount diverted was 9.54 per cent of the total borrowing. The amount diverted by medium farmers and big farmers was 6.33 per cent and 3.21 per cent respectively. According to the study there was no diversion of loan taken for purchase of tractors. In case of a loan for the purchase of tractor the entire loans amount was utilised by the borrowers. The highest diversion of loans was reported in case of loan taken for pump-set plus sinking of wells. The amount taken for this purpose was 47.43 per cent of total borrowing. Out of this Rs. 73,078 or 86.94 per cent of amount sanctioned for this purpose or 41.23 per cent of total borrowing was used for purpose and Rs. 10,975 or 13.06 per cent of amount sanctioned for this purpose or 6.20 per cent of total borrowing was divirted to other purposes. The amount taken by medium farmers for pumpset plus sinking or new wells was 23.11 per cent of total borrowing of which 80.71 per cent was used for purpose and 19.29 per cent was diverted to other purposes. The amount taken by big farmers for this purpose was 23.32 per cent of total borrowing of which they utilised 92.86 per cent and remaining 7.14 per cent was diverted to other purposes.

The total amount diverted was Rs. 16,908 or 9.54 per cent of total borrowing. Out of this total diversion, Rs. 8,550 or 50.57 per cent was diverted to productive purposes and Rs. 8,358 or 49.43 per cent was misused for unproductive purposes.

It may be noted from the table given on page 29 that misutilisation in case of miscellaneous expenses was highest, which was Rs. 4,025 or 23.80 per cent of total diversion or 2.27 per cent of total borrowing Miscellaneous expenses include ceremonial purposes, travelling, smoking, drinking, entertaining, hotelling, etc. which fall in nonproductive categories of loan uses.

The share of purchase of seeds to total diversion was Rs. 800 or 4.83 per cent of total diversion. Farmers also diverted a sum of Rs. 1,050 or 6.21 per cent of total diversion to pay wages to the labourers hired for agricultural operations.

Some borrowers misused the loans to make repayment of old debts. Rs. 2,083 or 12.32 per cent of total diversions was spent to get redemption of old debts The share of food and clothing in diversion of loan was Rs. 2,250 or 13.31 per cent of total diversion or 1.27 per cent of total borrowings.

The analysis revealed the largest extent of utilisation of loan in case of purchase of tractors.

Sr. No.	Purposes of Diversion	Amount Rs.	Percentage to total diversion	Percentage to total borrowing
A.	**Productive Purposes**			
1.	Draught animals	2450	14.49	1.38
2.	Agricultural operations	1050	6.21	0.59
3.	Purchase of seeds	800	4.73	0.45
4.	Purchase of fertilizers	1600	9.46	0.90
5.	Shares & debentures	2650	15.68	1.50
	Sub-total	8550	50.57	4.82
B.	**Unproductive purposes**			
1.	Redemption of old debt	2083	12.32	1.18
2.	Food and clothing	2250	13.31	1.27
3.	Miscellaneous expenses	4025	23.80	2.27
	Sub-total	8358	49.43	4.72
	GRAND TOTAL	16908	100.00	9.54

followed by purchase of pumpsets and diversion was highest in case of 'pumpset plus sinking of wells' followed by 'sinking of wells' and pumpsets plus repair of wells. The diversion of loans made by medium farmers was more than the diversion made by big farmers.

Reasons for Diversion

Farmer-borrowers had the tendency to divert some part of amount sancioned for a particular purpose to other productive and unproductive purposes due to a number of reasons. The amount diverted by medium farmers was more than the amount diverted by big farmers. The reason was that the big farmers required more funds to manage and maintain their farm resources/assets and hence they did not get a chance to divert more amount. On the other hand, the capital requirements of medium farmers were lesser than the big farmers and therefore they could divert more amount than the big farmers. Some farmers failed to sink the wells because of the hard layer just below the surface of the soil due to which they were compelled to stop the work and automatically they got the chance to spend the remaining amount for some other purposes. It means the loans were provided without examining the technical feasibility of the proposed development. The diversion of loan was also reported to purchase the shares and debentures of the bank, because the borrowers were not in a position to purchase them, out of their own funds. One of the reasons, reported for diversion of loans, was purchase of bullocks, because most of the farmers of the area were dependent upon bullocks for ploughing operations and hence they required to purchase the draught cattle after every two or three years. This purpose needs serious consideration and may be included in the sanctioned purposes.

Some borrowers diverted a considerable amount of borrowing to repay the loan taken either from money-lenders or from cooperative societies. Some selected beneficiaries admitted that they claimed the loan from the bank for repair of wells (along with pumpsets) but indeed, they repaid the old debts instead of using the fund for repair of wells. Drought and semi-drought conditions and grip of poverty compelled the borrowers to divert some amount of loan for basic necessities such as food, clothing etc.

The diversion of loans towards the repayment of money-lender's debt is difficult to check but it can indirectly be checked by strict supervision of utilisation of loans. □

Agricultural Finance in Malda District

(Contd. From Page 27)

Legal measures should be taken vigorously against the defaulters and for that purpose, necessary assistance and cooperation of the Home Department of the State Government should be made available.

Administrative lacuna, if any, the banks should be removed to grear up the administration and to accelerate the pace of rural development.

A broad based training programme should be drawn up to impart training to the employees, members of the Managing Committee and ordinary members and in this connnection, the cooperation and assistance of the Cooperative training Colleges and centres should be obtained.

Members' education programme should be properly drawn up and implemented in collaboration with State Cooperative Union and the concerned District Cooperative Union for a general improvement in the working of the societies. □

The Malady of Growing Public Debt

ubhash J. Rele*

THE PREDILECTION to under-play the damage the ever-growing public debt can do to the economy is widespread in our country. Our planners and policy makers have never bothered to pay any heed to the warning given by world bodies on this issue. The result is that the pace of increase in debt burden has grown in recent years. Some of the defenders of public debts assert that in terms of the GNP-public debt ratio, India is no worse off than the developed nations of the world.

Outstanding Public Debt

The statistics of Indian debt sound alarming. The outstanding public debt of the Government of India, as revealed in the recent budget papers, was estimated to amount to Rs. 34,738.21 crores at the end of 1979-80 and at Rs. 40,552.48 crores at the end of 1980-81, details of which are given in the table below :—

Details of Public Debt

(In rupee crores)

Type of Debt	As on March 31, 1980	As on March 31, 1981
Internal Debt	24839 00	29313 05
External Debt	9899.21	11239.43

Of the total public debt—internal and external—internal debt usualy accounts for 65 per cent and the balance represents external debt. 'Internal debt' comprises loans raised in open market, compensation and other bonds, and 15 years' annuity certificates. It also includes borrowings of a temporary nature, viz., treasury bills issued to Reserve Bank, State Governments, commercial banks and other parties, as well as non-negotiable, non-interest bearing securities issued by the international financial institutions like the International Monetary Fund, International Bank for Reconstruction and Development, International Development Association, International Fund for Agricultural Development, and the Asian Development Bank.

The public debt outstanding at the beginning of the first five-year Plan (1950-51) was of the order of Rs. 2565.40 crores. It was doubled in a decade's time and stood at Rs. 6244.24 crores at the close of 1960-61. After this the increase has been sharper and at the end of 1977-78, it touched the figure of Rs. 40,900.36 crores. The debts of State Governments to the Centre increased more than hundred-fold in the last 25 years. At the end of 1947-48, the total debts stood at Rs. 62 crores. Loans to the States now account for more than half of the total outlay of the Central Government. The increase in the State Governments' debts was due to the large assistance provided by the Centre to them year after year for their development outlays, leading to the creation of capital assets and for meeting non-Plan needs. States find it easy and convenient to go in for debts at the drop of a hat, by resorting to overdrafts. This must stop once and for all. The Centre and the State Governments can ignore the danger signals to their own peril. All this is not an argument for defeatism but a plea that a difficult problem should be faced squarely so that credible remedies can be devised.

Foreign Exchange Reserves

Much noise was made in the past over the accumulated foreign exchange reserves in Government kitty. It has been realised that the trumpet of achievement on this score was blown too loud and too long. This was unfortunate for it encouraged complacency when there was need to put accumulated reserves to productive use. In 1978-79, our foreign exchange reserves, excluding gold and SDRs rose by Rs. 927 crores without taking into account the transactions with the International Monetary Fund In 1979-80, however, there was a decline of Rs. 56 crores and the declining trend has continued in the current year. By May 30, 1980, foreign exchange reserves (excluding gold and SDRs) showed a decline of Rs. 274 crores from the start of the year, as against a rise of Rs. 282 crores in the corresponding period of 1979-80. The slow down in reserve growth can be attributed to a levelling off in the rate of remittances by Indian expatriates, whose numbers abroad is now believed to be rising far less rapidly than in the recent past. Some part of the decline can be traced to the fall in the rupee value of foreign exchange assets held in the form of US dollars. During the first two months of this financial year, our foreign exchange assets have declined by Rs. 333 crores and the fall will be sharper in the months to come. The Economic Survey rightly points out that in sharp contrast to the steady increase in reserves in each of the past four years, foreign exchange reserves declined by Rs. 55 crores during 1979-80.

Rise in External Debts

Internal public debt is owed by the Government to its own citizens while the obligations of external debt are to other Governments. The increase in external debt, which was just one per cent during the first Plan, rose to 28 per cent during the second Plan and 66 per cent during the subsequent plans. According to one study, in two decades of planning from 1951-52 to 1970-71, external debt accounted for 55 per cent of the increase in Government indebtedness, both internal and external. The volume of external assistance received by India has shown a continuous decline since 1968-69 and had touched the lowest level in 1972-73. However, the gross inflow of external assistance has shown an upward trend since 1973-74. This was despite the repeated emphasis on self-reliant economic growth.

The only silver lining is that, of late, there has been some improvement in the quality of assistance by some

*Freelance Writer, Bombay

of the donor countries. The Economic Survey 1979-80 reveals that the net external assistance received by India has been declining since 1976-77. From Rs. 1,154 crores in 1975-76, it fell to Rs. 844 crores in 1976-77 to Rs. 469 crores in 1977-78 and further to Rs. 384 crores in 1978-79. According to revised estimates, net aid is expected to increase to Rs. 524 crores in 1979-80.

Service Charges

In consonance with the rising pace of public debt, the service charge also increases. The current year's budget has estimated the outflow by way of interest charges on its debt obligations of the order of Rs. 2,597 crores. The payment provided for is substantial—Rs. 391 crores more than last year's revised estimate of Rs. 2,206 crores. The interest outflow stood at Rs. 2,161 crores in 1979-80. The increase this year is attributed to the growth in the volume of public debt and additional annual collections under various small saving schemes. It is the internal debt which largely accounts for the rise in interest payment. External obligations in the form of interest during the current year are estimated at Rs. 230 crores as against Rs. 233 crores in the revised estimates for 1979-80. Debt service payments comprising amortisation and interest payments amounted to Rs. 882 crores in 1978-79. These were higher by Rs. 61 crores when compared with those for 1977-78.

At this level they siphoned off as much as 70 per cent of gross aid receipts during the year. Expressed as a percentage of export earnings, debt payments in 1978-79 amounted to about 16 per cent compared with a little more than 15 per cent in 1977-78. Currently, we are devoting more than three per cent of the national income for debt servicing. The rich nations have been increasingly parsimonious since 1973-74 in providing debt relief. The moot question is: How can we reverse this trend? Again, the proportion of untied credits in the total aid package should be augmented so that the country can utilise the assistance quickly and effectively.

Explosive Situation

More than seven years ago, Lester B. Pearson, in a report, had described the rise in debt and debt service payments of developing countries during the last 1[illegible] years as "explosive". He felt that it can jeopardise the development process of developing nations if they fail to take proper action at their earliest. It is a common knowledge that as the public debt grows, the cost of servicing also increases. Our repayment obligations impose a tremendous burden on the economy. They put a strain on foreign exchange and act as a drain on internal resources. The burden of servicing foreign loans has been steadily rising over the years. The burden of repayments will become still heavier during the sixth Plan period.

A hundred-fold increase in Government indebtedness is quite alarming, to say the least, even though it is conceded that the rise in prices during the planning period has considerably reduced the magnitude of the real interest burden on these debts. The only consolation, if it can be called so, is that the great bulk of our public debts is internally held. This implies that the debt does in no way alter the wealth of the nation. This, however, ignores the other very serious implications of higher and growing public debt on the future generations. Is it too much to expect the present Government to see logic and reason and evolve a national policy towards public debt? □

TRENDS

Bank Loans for Agriculture

THE CENTRE has decided to earmark 40 per cent of the commercial banks' priority sector lending for the agricultural sector.

The Finance Minister, Shri R. Venkataraman, said in Srinagar on October 24, 1980 that the Government had accepted a recommendation to this effect made by a working group set up by the Reserve Bank and issued instructions to the banks accordingly.

The working group further recommended that 50 per cent of all direct lending by commercial banks for agricultural and allied activities should be for the benefit of the small and marginal farmers and agricultural workers. This recommendation had also been accepted by the Government, he said while addressing the consultative committee for the nationalised banks in the northern region.

Reorientation of Training Programmes

SHRI NARAYAN DATT TIWARI, Minister for Planning and Labour has emphasised that the technical training programmes in the Industrial Training Institutes should be drawn up in the context of employment opportunities being generated in the various sectors during Sixth Five Year Plan.

Reviewing the technical training programmes being undertaken both at basic and specialisation levels, the Minister was of the view that a quick survey should be undertaken to forecast skilled manpower requirements in various sectors during the Plan period. There was also need for changes in training programmes with greater emphasis on preparing people for self-employment.

In the employment services, we had to devise completely new modes of human relations to remove hardships experienced by the job-seekers. The employment exchanges along with registration must take up extension programmes of providing information on training opportunities, entry qualifications, working and living conditions and career prospects. The role of the employment exchanges would increase with the setting up of district development centres and district employment generation councils.

Children to Plant Trees

THE PRIME MINISTER, Smt. Indira Gandhi, has commended the social forestry programmes launched in Ratlam district of Madhya Pradesh which seeks to involve children in tree planting. The Prime Minister has said :

I understand that a beginning has been made in Madhya Pradesh, where, in one district, children have been involved in a Social Forestry Programme. Under this programme, the idea is to make every child in the district plant a fruit-bearing tree and make the child responsible for looking after it. A name-plat is affixed on the tree exhibiting the name of the chil It will be the property of the child, for which he or sh will be given a "patta" (ownership).

Haryana's Afforestation Drive

IN HARYANA a big campaign to cover avail able space with clusters of trees is making satisfactor progress. The State Forest Department has prepare an ambitious tree planting programme for the Sixt Plan, involving an expenditure of Rs. 17 crores. I envisages afforestation over 19,775 hectares and alon 27,500 road kilometres. In addition 2,700,000 cror saplings would be planted over farm lands. The prog ramme is expected to generate employment to the ex tent of 1,300,000 man-days. Another feature of th Sixth Plan is provision of Rs. 50 lakhs for the deve lopment of wild life in the State.

So far saplings have been planted along 340 kilo metres long roads, railway tracks and canals wher water is easily available. Saplings have also been plant ed over 100 hectares of waste land belonging to villag panchayats. While the administration has been mad responsible for this free-of-cost plantation, the panch ayats will get income from these trees.

Two Nucleus Plants for Every State

THE UNION MINISTER for Industry, Dr. Charan jit Chanana, has asked the Chief Ministers of all State to identify at least two industrially backward district in each State for setting up nucleus plants. Dr Chanana revealed this while initiating a dialogue wit the members of the Association of Indian Engineerin Industry in New Delhi recently. The Minister assure that the basket of incentives would be given to ancil lary industries in backward areas. The Government i in a mood to evolve a system where incentives ca promote industrial production. Providing of infras tructure would be the Government's responsibility Dr. Chanana added.

The Minister said that the setting up of ancillar industries was to be related to each project and tha public and private sectors would be given the sam type of incentives.

Fashion Technology Institute

AN INSTITUTE of fashion technology is being se up at Madras with foreign collaboration. The Advise to the Union Government on Handlooms and Handi crafts, Mrs. Pupal Jayakar, indicated, this at a new conference in Madras recently. She said the establish ment of such an Institute was a must if the handloom sector was to produce the best cloth which was i tune with consumer tastes and easier to sell. Currentl this sector faced problems of accumulating stocks be cause what was produced was at variance with consu mer demands. The proposed Institute, she said would train personnel not only in designing but als in cutting, sizing and grading.

Single Agency for Rural Development

ALL programmes of rural development will no be implemented at the district level through a singl agency called the District Rural Development Com mittee. This was announced recently by the Unio

Agriculture And Rural Reconstruction Minister, Rao Birendra Singh, at the meeting of the Parliamentary Consultative Committee.

The members while welcoming the programmes for rural development, pointed out deficiencies in the implementation and suggested improvements.

Some members called for proper evaluation and tighter control over the work under the National Rural Employment Programme, greater involvement of people, stoppage of contract system and taking the village as a unit for development.

Liberal Attitude To Electronics Industry

THE present liberal attitude of the Government of India as reflected in the 1980-81 Budget, towards electronics industry should be maintained throughout the Sixth Plan Period to ensure its speedy growth.

This has been recommended by the Task Force on Export of Entertainment goods, under the Chairmanship of Shri A. K. Dutt, Secretary, Ministry of I & B. which submitted its report recently.

The Task Force has recommended that National Film Development Corporation should play a pre-dominant role in the promotion of export of films and it should take particular interest in exporting low Budget quality films and regional films.

It has been recommended that imports of equipment required for upgradation and modernisation of shooting and processing of films be permitted freely and that such imports may be treated at par with the imports of capital goods and equipment for industrial projects and charged duty at the reduced rate of 25 per cent to encourage modernisation.

The Task Force has recommended that the censorship guidelines for films meant for export should be on somewhat liberal basis The existing rules, regulations and laws relating to co-productions, joint ventures and shooting of films in India, should be revised with a view to encouraging such activities and it has been recommended to set up an inter-Ministerial group for working out the fresh comprehensive guidelines.

Container Handling Equipment for Ports

MODERN CONTAINER handling facilities are to be provided at Bombay, Cochin, Madras and Haldia ports at a cost of Rs. 46 crores during the next five years. Keeping in view the traffic projections and rapid development of container handling facilities at some of the neighbouring ports, two types of schemes have been envisaged—comprehensive schemes at Bombay, Cochin, Madras and Haldia, and limited schemes at other ports.

Subsistence Allowance for the Old

FOR THE OLD, infirm and destitute persons of 60 years and above, with no means of livelihood, Madhya Pradesh Government has launched a social Security Scheme of providing them a subsistence allowance of Rs. 60 per month. The scheme was announced by the state' Dy. Chief Minister, Shri Solanki on the occasion of Gandhi Jayanti.

Drinking Water and Sanitation Decade

THE MINISTER for Works and Housing and Parliamentary Affairs, Shri Bhisham Narain Singh has pledged country's full support to the aims of the International Decade for Drinking Water Supply and Sanitation commencing from the first of April next year. Broadcasting a message over All India Radio recently the Minister said that a beginning had already been made in India in this direction by declaring our intention to accord high priority to rural drinking water supply in the new Sixth Five Year Plan. Insofar as the problem villages were concerned the Government had resolved to provide safe drinking water within the next five years. The villages which had no protected source of water supply within a reasonable distance or where water carried cholera or guinea worm infestation or contained toxic elements hazardous to health had been termed as "problem villages". He said it was proposed to tackle the problem of rural sanitation on a large scale in the coming year through the popularisation of low cost sanitary latrines. Particular attention would also be paid to the problem of pollution in the cities caused by the discharge of domestic and industrial wastes in water courses. Priority would be given to urban areas endemic to diseases like filaria.

Drinking Water For All Villages By 1985

IT IS, estimated that on April 1, 1980, about two lakh villages are still to be provided with protected drinking water. The target is to cover all these villages during the Sixth Plan period (1980—85). It is estimated that about Rs. 2,000 crore would be required for this.

A beginning has already been made to step up the outlay for the centrally sponsored accelerated rural water supply programme from Rs. 65 crore to Rs. 100 crore in the current financial year.

CORRECTION

In our issue dated 1-15 December 1980, on page 4, para 2, line 10, it should be 1639, not 1939. Error is regretted.

STEP BY STEP

Handloom Exports

THE EXPORTS of handloom goods during the quarter ending July, 1980 went up to Rs. 1106.5 million as against Rs. 947.9 million during the corresponding period of last year—an increase of Rs. 158.6 million. According to the Handloom Export Council, exports of cotton handloom fabrics and silk goods are on the increase. Among the made-up items the export of pillow covers and table cloth, towels and napkins etc. showed an increase over the corresponding period of 1979.

Early Maturing High Yielding Arhar Varieties

A LARGE number of early maturing and high yielding varieties of 'Arhar' developed by the Indian Agricultural Research Institute hold out promise for enhancing the production of pulses in India. The production of pulses in the country has so far remained stagnant around 12 million tonnes a year. A striking feature of these new varieties of 'Arhar' is that they will help vacate the field before the middle of November instead of traditional March-April. These varieties can also be fitted into wheat-arhar rotation in areas with limited irrigation facilities replacing the wheat-rice rotation which requires a high degree of assured irrigation for the Kharif rice crop. Disclosing this to newsmen in New Delhi recently the Director of IARI, Dr. H. K. Jain said that 'Arhar' was mainly a kharif crop sown by June and harvested ten months later in the following spring. Such long duration crops, naturally, could not be grown in fields where improved technologies have brought about revolutionary changes in agriculture. The IARI, therefore, took up research in developing short duration varieties which would vacate the fields within 130 to 150 days for wheat.

"Fertiliser News" Agronomy Special Number

FERTILISER NEWS, an English monthly of the Fertiliser Association of India has come out with an Agronomy Special Number in September, 1980. The 90-page special issue carries about a dozen interesting articles by experts.

Surat Tribals Take to Cooperatives

THE IMPROVEMENT in the economic status of the adivasis (Tribals) in the Surat District is significant. They now eat well, dress well and own transistors. The credit for this goes to a team of veterinary doctors led by Dr. Ghasia. They taught the adivasis of Khuntadia how to get credit from banks and how to form and run a cooperative society in a correct manner. The adivasis did not take much of persuasion to get going with the milk cooperative society. The society was given all the help by the Sumul Dairy.

The team work enabled the villagers to repay one fourth of the loan in one year. After the loan was fully returned, the adivasis started getting Rs. 15 per day per buffalo, Rs. 10 as cash and Rs. 5 as deposit in bank as compulsory saving.

Encouraged with the success in the cooperative dairying the adivasis of the Khuntadia village turned to farming. They got their wells deepened. This provided a boost to their income. The social and economic scene of the village is now fast changing.

Electric Driers for Cardamom

WITH THE objective of improving quality of cardamom and providing curing facilities for the small growers, the Cardamom Board installed three electric driers at Sirsi, Mercara and Bhagamandala in Karnataka. A fourth electric drier is being installed at Virajpet in the State.

The small growers find it difficult to have a curing arrangement of their own on account of the financial and quantity constraints and hence they normally resort to sun drying which results in low price for their produce. To begin with, drying will be undertaken at a nominal charge of Rs. 2.50 per kg. of cured cardamom.

These driers can cure 150 kgs. of freshly picked green cardamom in a shift of 7-8 hours and to begin with there will be two shifts in a day.

ARDC Makes Good Progress

THE Agricultural Refinance and Development Corporation disbursed Rs. 412 crores towards refinance as against Rs. 285 crores disbursed in the previous year. By the end of December 1979, disbursements under the Second ARDC Credit Project of $ 200 million approved by the International Development Association had been completed and the Third ARDC Credit Project of $ 250 million became effective from January 2, 1980. The Corporation successfully negotiated with the IDA three other projects in inland fisheries, cashew and sericulture.

The gross disbursements of the Corporation since its inception and upto the end of June 1980 aggregated Rs. 1,738 crores excluding short-term finance of Rs. 9 crores. Minor irrigation continued to be the major single purpose accounting for Rs. 1,130 crores, land development for Rs. 66 crores and other diversified purposes for Rs. 263 crores.

During the year, 3,657 schemes with commitment of Rs. 757 crores were sanctioned, as against 2,505 schemes with commitment of Rs. 573 crores in the previous year. As at the end of June 1980, 12,225 schemes involving the Corporation's commitment of Rs. 3,770 crores had been sanctioned.

As many as 92 banking plans covering 671 blocks involving the Corporation's commitment of Rs. 61 crores were sanctioned under Integrated Rural Development Programme and a sum of Rs. 4 crores has been disbursed.

The cumulative disbursement of Rs. 1,738 crores (excluding refinance of short-term loans) since the inception of the Corporation and upto the end of June 1980 represented ground-level investments of the order of Rs. 2,000 crores. The Corporation has assisted in bringing about 32.93 lakh hectares under multiple cropping with the help of 3.25 lakh tube wells, 5.23 lakh dugwells and 7.55 lakh pumpsets (both electrical/oil engines). Lands developed under the command areas of major irrigation projects and areas improved under soil conservation schemes aggregated 11.18 lakh hectares. The total area developed under the various schemes of plantation and horticulture was 1.12 lakh hectares. The Corporation has also provided refinance for the construction of godowns with 6.1 million tonne capacity, development of market yards with 152 units, purchase of 53,400 tractors, 3,000 power tillers, harvesters, combines, etc., 3,400 trawlers| mechanised boats, 1,34,700 milch cattle, 23,45,700 poultry birds and 5,52,800 sheep.

Exhibition on Soil Engineering

THE Central Building Research Institute, Roorkee (U.P.) arranged an exhibition on 'Soil Engineering' recently to acquaint the field engineers, architects and builders with some recent work in this field. The Exhibition was inagurated by Dr Jagdish Narain, President, India Geotechnical Society and Vice-Chancellor, University of Roorkee. In his inaugural address, Dr. Narain called upon the Engineers and Scientists to think of the common man and direct their research and development efforts to improve the quality of their lives. Speaking on the occasion Sri Davendra Sharma, Senior Scientist mentioned that the entire effort of the Institute was directed towards finding economical answers to pressing foundation problems of the country. For constructing single storeyed low cost houses in black cotton or filled up soil area, he explained, how the recently developed pedestal piles would effect further economy. He mentioned that the Institute had recently advised on strengthening of the foundations of a 5000-tonne capacity 24m. dia. molasses tank for a sugar factory in Badaun. In addition, the Institute is presently providing a design of an oil drilling rig foundation in Assam at the instance of ONGC.

Handicapped Becomes Self-Reliant

SRI AYYAPAN, aged 30 is a physically handicapped person. He belongs to a poor scheduled caste family of Kattar village in Tiruverambur Block of Tiruchirapalli District. Tiruchirapalli Branch of Syndicate Bank has helped him under the scheme of financial assistance to physically handicapped by granting a loan of Rs. 300 at the differential interest rate of 4 per cent. With this loan, which he received from the Bank three months ago, he started a minor blacksmithy workshop. He invested the loan amount in the purchase of necessary tools such as hacksaw-files, small blowers and a little quantity of steel-sheets and plates. He is making domestic knives, spoons etc. and selling them in the local market. He is repaying Rs 15/- per month regularly. In 20 months' period his loan amount will be wiped off.

S. Subramanian, FPO. Tiruchirapalli

HZL Makes Good Strides

THE Hindustan Zinc Limited, Udaipur, a public enterprise earned a net profit of Rs. 876.43 lakh during 1979-80 against the previous year's Rs. 501 lakh. The profit has been earned on a sales turnover of Rs. 6,977 lakh—an increase of 19 per cent compared to Rs. 5,842 lakh in the year 1978-79.

During the year 1979-80, 70 tonnes of cadmium was exported to the USA and European countries earning over Rs. 30 lakh in foreign exchange.

The HZL has taken up detailed exploration of Rampura-Agucha zinc-lead prospect in Bhilwara district at an estimated cost of Rs. 125 lakh. The prospect has established a potential of 35 million tonnes of ore with over 10 per cent metal content (zinc+lead) which

makes it the largest single deposit of zinc and lead in the country. It is important because the deposit is suitable for open cast mining.

The expansion of milling capacity from 100 tonnes per day to 200 tonnes per day of ore has been completed at Agnigundala Lead Mine Project in Andhra Pradesh and the expansion of mining capacity from 120 tonnes per day to 240 tonnes per day is in progress.

A Rs. 30 lakh worth of silver refinery to produce 99.999 purity silver has been commissioned at Vizag zinc-lead complex in August, 1980. With the production of some quantities of gold, this refinery will pay back its cost within next two years.

Greening of Desert Areas

RAJASTHAN'S biggest drive so far to restore much of the ecological imbalance caused by deforestation is about to end. Officials claim that since the launching of the drive 18.1 million trees have been planted, mostly in the desert or dry areas. The target is 20 million trees.

Nearly 50 per cent of saplings have been planted in 11 desert or semi-desert districts of the State which has a total of 26 districts. The roads leading to Barmer and Jaisalmer from Jodhpur (the three drain desert districts) are dotted with tiny saplings three abreast. Normally only one sapling is planted on the roadside but their number was increased to ensure better survival. And although the testing time for the survival of trees will begin later, the survival rate so far is said to be 90 per cent at most places, on the two highways.

The 2,000 sq. km. desert national park area in Jaisalmer and Barmer districts is to be skirted with tree fencing to add to the forest growth as also to revive the near extinct wildlife of the area.

10C Makes Record Profit

INDIAN OIL CORPORATION earned a gross profit of Rs. 158.85 crore during the year ending 31st March, 1980. It is the highest profit made by the Corporation so far, and marks a significant improvement over the previous year's figure of Rs. 123.53 crore. The net profit for 1979-80 stood at Rs. 73.40 crore as against Rs. 69.20 crore during 1978-79. In terms of turn-over also, Indian Oil achieved a record Rs. 4476 crore in 1979-80, an increase of about 25 per cent over the previous year. The dividend was maintained at 12 per cent

Though the achievements of the IOC were laudable, the continued growth rate of demand at 10 per cent for petroleum products was a matter of worry. The present demand for these products in the country is about 31 million tonnes per annum and it will reach upto 80 million tonnes in the next decade. As had been predicted it would be difficult, though not impossible, to procure crude oil by that time. It was therefore, necessary to reduce the present rate of demand for oil and switch over to other sources of energy. For this purpose he suggested a five-point programme for action which would serve the purpose without affecting the country's economy. The five points are :

(i) Increasing production of coal and its transportation to consuming centres ; (ii) Increasing power generation ; (iii) Augmentation of railway transportation capacity in order to move more goods rather than depend on road transport, as the latter requires six times more energy as compared to the former ; (iv) Improvement in port facilities to facilitate transportation of long distance traffic by waterways ; and (v) Exploration for and production of more crude oil in the country.

Middlemen Removed

IN MADHYA PRADESH the State Marketing Federation has frustrated the designs or vested interests by launching an organised collection and sales of Tendu leaves in the cooperative sector. Expressing his happiness over this achievement the State Chief Minister hoped that the Federation would extend cooperative enterprise to cover other fields also. The Chief Minister was speaking at a function held at Bhopal recently where he was presented a cheque of Rs. 3.005 crore by the Federation as royalty due to the State on the sale of Tendu leaves. Presenting the cheque on behalf of the Federation the Minister of State for Cooperation said that the Federation was dedicated to benefit the common man. It had done excellent work in marketing the Tendu leaves.

The trade in Tendu leaves was nationalised in 1965. As a result the royalty earned by the Government had risen to Rs. 3.005 crore from Rs. 86 lakh during the pre-nationalisation period. About 30 lakh standard bags of Tendu leaves were collected in the State and half of this quantity was exported.

Pollution Control at HZL

WITH the expansion of the Zinc Smelter, Debari to 45,000 MT per annum and the commissioning of phosphoric acid plant, the existing effluent treatment facilities are also being expanded and modernised. The estimated cost is about Rs. one crore and the new modern effluent treatment plant would start functioning by the end of this year.

The new effluent plant will consist of two streams—one for treating effluents from zinc circuit and another for effluents from phosphoric acid and superphosphate circuit. In the zinc circuit, zinc will be recovered in the form of zinc hydroxide besides neutralising the effluent. In the second stream, stress will be on removal of flourides and phosphates in two stages so that the final discharge is free from these elements.

The effluents from Zinc Smelter, Debari are presently discharged into lagoons and after initial sludge settlement, these are properly treated with lime to neutralise the acidic contents and to precipitate the zinc An amount of Rs. 50 to 60 lakh is being spent annually on this arrangement only with a view to neutralise the effluent and render it harmless.

BOOKS

Poetic Piece on Dadu Panthi

The "Sarvangi" of the Dadu Panthi Rajab by Winand M. Callewaert, Department Orientalistiek, Katholieke Universiteit, Leuven, Publishers' Distribuors : D. K. Distributors, New Delhi, Pages 446, Rs. 60.

A principal disciple of the Sixteenth Century mystic-reformer of Rajasthan, Dadu Dayal, Rajab is credited to have composed this highly devotional work of nearly 8000 verses in a Hindustani dialect. "Sarvangi" is an eloquent piece of poetic literature reflecting the profound idealism of the saints of medieval India whose grand synthesis of the ideals of Hindu Vedanta and Islamic Sufism continued to inspire successive generations of Indians.

Mr. Callewaert who worked on the life and poetry of Rajab for his Docotrate in the Catholic University, Leuven, (Belgium), presents a revised version of his thesis which is the text of this volume. The scholar examined about ten manuscripts of "Sarvangi". studied several possible sources of Rajab's biographical material, selected some of the more important distichs, critically edited them and attempted an annotated translation in this publication.

To spiritual-minded persons who believe in the traditional Guru ideal, Rajab's piece which flowed out of intense personal mystic experience at the feet of his own guide provide a rewarding reading on the inner verity. There are several instances of ennobling poetic expressions of profound religious thought, based on empirical experience.

The author includes a separate chapter to project the teachings of Rajab which adds to the significance of the publication. For those who can read Rajab in original, over 800 distichs are included in the volume.

A painstaking study lovingly made by a Western academician. "Sarvangi" is yet another welcome addition to Indian literature on the Bhakti Cult of Northern India.

—**V. Patanjali**

Public Service Delivery System

Public Service Delivery Systems for the Rural Poor; Published by the United Nations; pages 93.

IN the past, it had been generally believed that when a poor country's saving and investment rate goes up from about 5% of the national product to about 15%, that country would reach a stage at which self-sustained growth would be possible. It was also assumed that when national income increased, the poorer sections of the population would automatically stand to gain. The past three decades of planning for econmic development in India have shown the serious limitations of these assumptions. Though national income and per capita income have been rising at a compound rate of over 3.6% and 1.5% respectively, the number of people living below the so-called 'poverty line' has increashed significantly during these thirty years. In most of the Third World countries, with the initiation of the development process against a background of great inequalities in the distribution of incomes and wealth, the poorer sections of the population have only tendered to become poor even as the national economies moved forward. Rising national incomes, diversification of the structure of output, increasing exports and a measure of technological progress have somehow tended to by-pass the poorer sections of the population in many Third World countries. Why do poor people remain poor when progress takes place before their very eyes ? Why cannot prosperity reach the rural poor also ?

The poorer sections of the population, who live mainly in the rural areas of Third World countries, need education, organisation and resources if they are to break the grip of poverty and to achieve higher income and consumption levels. Left to themselves, they are unlikely to get a reasonable share of the national cake. Their motivation, managerial ability and general outlook will have to be radically altered if they are to fully participate in the development process. Ultimately, the task is one of evolving a suitable delivery system for inputs and organisational arrangements- for marketing the final produce. The Economic and Special Commission for Asia and the Pacific, an organ of the United Nations, has taken note of this paradox in the development scenario in the Third World and a Conference was held in Delhi in 1979 to focus attention on this problem. The volume under review is mainly a record of the deliberations in this Conference. The report gives a bird's eye view of the rural scenario in the Third World and discusses the current arrangements for providing inputs like power, fertilisers and credit. It also surveys the marketing infrastructure for various commodities produced in the rural sector. The minimum needs approach is tacitly accepted in all the discussions. This booklet brings out the scope and limits of current strategies for taking scarce inputs and services to the small farmers, marginal farmers, etc. This is a useful handbook for those who are engaged in the formulation of policies for the amelioration of rural poverty. It does not, however look at the totality of the economic and political situation in the Third World countries in the context of the continuing disparities between the rich and the poor nations and the vastly disproportionate share of resources consumed by a minority comprising of the rich nations. Even within the Third World countries, it is to be wondered whether it would be possible to evolve and administer an effective delivery system for the poor without radically re-ordering the distribution of land and other assets in the rural sector.

C. N. S. Nair

Aspects of Rural Development

Rural Development in India, Some Facets, National Institute of Rural Development, Hyderabad. Pages 560. Rs. 100.00.

THE National Institute of Rural Development is a specialised organization organising training programmes as a part of its servicing activitiy to central, and state governments and other organisations. During these courses the various faculties of NIRD prepare lectures on different aspects of rural development. Over a number of years, these topics cover a wide area of study and data collected to support the lectures is enormous. The present compilation is the result of these efforts published for the information of wider readership.

The study is divided in four sections, namely, rural socio-economic scene, approaches to rural development, programmes of rural development and organisational aspects of rural development. The first section

contains six lectures dealing with broad problems such as strategies, social structure, and poverty and unemployment in rural areas. The second deals with institutions and organisations concerned with rural development along with an empirical study of the growth pattern of rural areas. The various programmes of rural development are studied in twelve lectures included in the third section. They deal with such diverse problems like land reforms, rural credit, integrated rural development, housing, water supply, adult education and the Antyodaya approach. The last section is primarily concerned with the administrative pattern and contains an evaluation of panchayati raj institutions.

A study of the present kind is bound to be of uneven standard. The usefulness of the publication lies in its presentation of enormous data and information relating to various aspects of rural economy and its development. The publishers have been careful in indicating that the lectures have eschewed all controversial matters by not entangling themselves in such issues. The approach is useful from the standpoint of training courses because the trainees are not to be indoctrinated in any special school of opinion championed by the lecturers, but academicians renowned for their objectivity must come forth to evaluate the programmes boldly which a bureaucrat will not be in a position to do.

While commending the publication to every undergraduate student specialising in rural development, the present reviewer would have preferred more studies like that of Dr. Mumtaz Thada in which the hierarchical study of socio-economic activities, locations and inter-dependence of grouping of settlements have been empirically studied. The study showed that a lower primary school is established when there is a minimum population of 168 persons, a health sub-centre with 881 persons and a milk chilling plant with 2302 persons. Secondly, the different lectures dealing with related subjects should have taken care to synchronise their data. Data on unemployment given on pp 75 and 420, and of integrated rural development programme on pp 170 and 427 do show some differences though not of serious magnitude. Thirdly, a consolidated bibliography and an index would have greatly increased the value of the publication.

Bepin Behari

Administrative Reforms

The ambiguity of Ideology & Administrative Reform : By Krishna Kumar Tummala : Allied Publishers Ltd. ; New Delhi. Pp 367 ; Price Rs. 50.

THE aim of the serious study made in this book is whether accepted ideas of development—ideological change and incrementalism—will be suitable and beneficial to a developing country like India. Both have certain virtues and both have certain limitations and disadvantages. Ideological transformation means a wholesale and rapid change of the traditional norms. In a developing country like India such a sweeping ideological push, however well-intentioned and well implemented, is bound to meet with resistance all along.

The author has delved into depths of the various methods of change in India, adopted U.K. and the USA and has argued at length the merits and limitations of the systems both in theory and practice. His suggestion for a proper mix of ideology and pragmatism for a progressive and non-violent change may be on the safe side. If this is attempted, it may well take centuries before India becomes a modern self-reliant and socialist state. Something more speedy and acceptable should be attempted with large political stability. This unfortunately, the author has not indicated.

K. P. Radhakrishnan

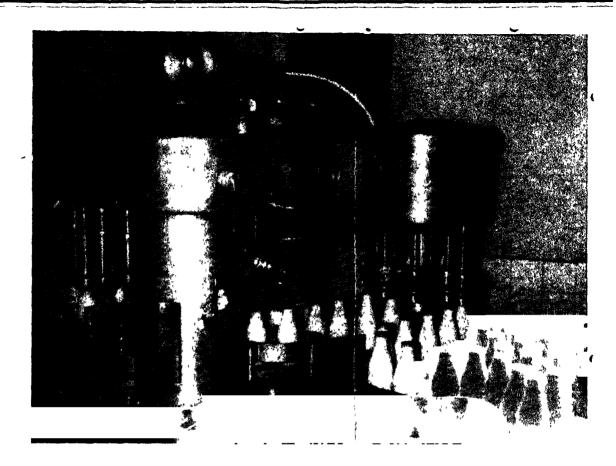
Under-Development

Dependent Accumulation and Underdevelopment by Andre Gunder Frank ; Macmillan, London ; pp. 226 ; Price £ 4.95.

PROFESSOR A. G. Frank's book is the latest contribution to Dependence theory of underdevelopment. The purpose of the book is to show the irrelevance of the neo-classical theory as far as explanation of causes of poverty and wealth is concerned. Professor Frank does this by "taking global historical vision of Adam Smith and the dialectical historical analysis of Karl Marx as points of departure". This methodology is intended to do what the neo-classical theory does not do viz. to develop a world-encompassing holistic socially structural theory of development and underdevelopment (pp. 1-2). The end-objective of the theory is to go beyond dependence approach and demonstrate world capitalist accumucution as the cause of underdevelopment and the resultant poverty. Since the book is primarily an interpretation of history Prof. Frank periodises the capitalist development epoch into three phases : merchantilist (1500—1770) ; developed capitalist (1770—1870)—this is post industrial revolution but pre-monopolist period; imperialism (1870—1930). Each one of these three phases is devoted two chapters-one analysing the historical dynamics of capital accumulation and the other providing a theory of the accumulation.

Prof. Frank is a spirited intellectual of our times. He has been continuously sharpening his theory over since 1966. I have however, three questions before me. One, what new points has the book under review to offer, especially to those who advocate radical approach to study of economic history as also to those who have followed his several works ? Two, granting all his postulates what solutions exist to invert capitalist instrument of growth ? Three, how sound is this neo-neo-neo-Marxist theory empirically ? Unfortunately answers to all the three questions will be negative. Radical writings are always profound in explanation but very weak in impact as far development policies in the Third World are concerned. The Western capitalist regime has been quick to preempt impact by advising and aiding policies which seek to eradicate poverty within the framework of democracy and existing institutions. There is the magic of aid, soft loans, moratoria and what not. I shall not illustrate this point further because it may embrass the radicals of the democratic society like that of India. In fact the moot point is : will a radical plan ensure classless and absolutely egalitarian society ? The answer would be vague, from the quarters of both adversaries and votaries.

Dependence theory has yet to gain empirical support. There is now the view floating in our mind that dependence theory also looks like a circular reasoning ; countries are depending because they lack capacity for autonomous growth.

—Suresh N. Kulkarni

People's Milk—Miltone

THERE is wide recognition of the important role of milk as a protective food in our diets. This recognition is, however, not reflected in the per capita consumption of milk, which is only a little over 100 grams per day as against a minimal nutritional need of 180 grams per day. To say it differently, as against a nutritional demand of 126 million litres per day, the actual daily production is only 70 million litres per day. The reason for this discrepancy is not far to seek. Milk consumption is primarily a function of income and that is why the urban areas where the per capita income is the highest, consume the largest quantities of milk.

Since milk production is a high energy, high cost process it is all the more necessary to ensure that whatever milk is produced is conserved and more effectively utilised to benefit various sections of the community.

For the Weaker Sections

A novel way to meet the demand of the growing population, particularly the weaker sections of the community, is to produce a low cost product resembling milk in its functions, properties, and nutritive value. It is possible to blend fresh milk with vegetable proteins and fats to produce low cost milk like products which are nutritionally and functionally as good as milk. The country produces nearly 10 million tonnes of oil seeds of which groundnuts alone account for 7 million tonnes. If handled and processed scientifically they would yield 3 million tonnes of food grade cake or 1.5 million tonnes of good quality protein. Direct consumption of vegetable proteins along with milk proteins while improving the nutritive value the diet would also contribute significantly to a mc effective conservation and utilisation of our prote resources With these objectives in mind, a milk lil product called Miltone, has been taken up for prom tion, since 1973, by the Food and Nutrition Board the Union Government.

Miltone is produced by blending fresh milk wi protein isolated from edible groundnut flour and based on a process developed by the Central Foc Technological Research Institute, Mysore. The pr cess consists of the following steps : (i) extraction protein from groundnut flour; (ii) solubilisation protein; (iii) blending of protein with milk, additic of vitamins, sugar etc. followed by homogenization (iv) pasteurisation or sterilisation. Miltone is render hygienically safe by pasteurisation which involv heating to 75 to 88°C. for a short time followed b cooling to 4°C. It is normally packed in cans for di tribution in bulk, but could be bottled and foil capp like dairy milk. Pasteurised Miltone has been show to be suitable for making tea, coffee, curds, lassi, et It is similar to dairy milk in its nutritive value.

Sterilized Miltone, which is a protein beverage, prepared by adding extra sugar and appropriate fl vours to pasteurized Miltone. The product is filled i fancy beverage bottles, crown corked and sterilize at 121° C for 20 minutes. It has a longer preservin quality than pasteurized Miltone and can be store without refrigeration for a month or two. When serve chilled it makes an excellent nutritious protein beve rage.

Regd. No. RN 949/57
P & T Regd. No. D(D)/152
Licensed U (D) [illegible] without pre-payment at Civil Lines Post Office, Delhi

The following table gives at a glance, the nutritive
ue of Miltone as compared to standardised Milk :—

(Per 100 grams)

	Miltone	Milk
otein	4.0 g	3 1 g
it	[illegible]g	4.1g
irbohydrate	[illegible]	5.0g
ilids Not Fat	[illegible]	8.4g
tamin A	1[illegible]U	150I U
tamin D	28 I.U.	40 I U
itamin B-1	0 04mg	0 04mg
itamin B-2	0 15mg	0 14mg
iacinamide	0 30mg	0 20mg
ridoxine	0 03mg	0 04mg
ntothenic acid	0 25mg	0 30mg
itamin B,12	0 35mcg	0 40mcg
olic Acid	1 3mcg	0 60mcg
scorbic Acid	2 0mg	1 0mg

Miltone is being currently produced at Bangalore d Hyderabad by the Food and Nutrition Board in sociation with the respective State Governments and airy Development Corporations. Last year, production of Miltone was in excess of 25 lakh litres. Newer ts are being set up at Kanpur, Ranchi and Calcutta h the assistance of UNICEF. The trial run of the npur unit has already been found successful. In dition the capacities of the Bangalore and Hyderabad nts are being stepped up to 15,000 and 6,000 litres r day respectively through UNICEF assistance oposals are on hand to set up additional plants with pacities ranging from 5,000 to 25,000 litres per day ring the Sixth Five Year Plan period

rketing of Miltone

Miltone is currently being utilised in the sponsored ding programmes such as the Special Nutrition ogramme or the Mid-day Meal scheme at or around production centres. Sterilised Miltone is being rketed at Bangalore and Hyderabad and the Dairy rporations are intensifying their marketing efforts cater to the increasing demand for the product The phasis henceforward is likely be on marketing iltone to meet the specific demands for a milk like oduct by the low income groups which account for arly 60 per cent of our urban households. Market searches have shown that these families purchase

milk in fractions of a litre (fourth, fifth or tenth of a litre) while the organised dairies sell in only half litre bottles or sachets Morever, the organised dairies do not offer credit facilities It is common knowledge that the traditional milk vendor, while offering credit. as well as supplying in laractions of a litre has generally been selling substandard milk. What is required is a product which is nearly similar to milk in terms of its nutritive value and functional properties and which is available at a price they can easily afford Miltone meets the first requirement creditably and what is more essential now is to adopt a novel pricing strategy which will make it available to the consumer at reasonably cheaper prices At such a price the product would be very attractive compared to the price of regular dairy milk

They Do Not Lag Behind

SOUTH CHARILAM, a refugee colony in Bisalgarh Block of West Tripura district, did not have a common meeting place till recently. Nor the villagers had the resources to construct a house of that sort.

The Nehru Yuvak Kendra, Agartala, launched a ten-day 'Work Camp' in the village with 50 women of 'Chetana Sangha' a ladies club. Involving the village women also, they constructed a mud house of 40 ft. by 20 ft. with 6 doors and 9 windows on 'Shramadan' basis.

This house testifies the capability of our women if given the opportunity.

A. M. Paul, FPO, Agartala

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yojan

BRAIN
DRAIN

Nanjan with his sheep.

Ex-Convict Turned Ideal Shepherd

SMALL Farmers' Development Agency has been ssisting a lot of deserving farmers to come up in life. 'his is the story of Nanjan, a Harijan, who with his vill power has turned a new leaf after a period of arkness as a convict. Seven years back, Nanjan who ad committed an offence unknowingly pleaded for a ew life as a repentant. Sometime later, when he vanted to adopt a decent livelihood, SFDA came to is assistance. A unit of sheep was given to him for earing. Gradually, Nanjan learnt the art of sheep trade nd has so far sold more than 30 ewes each worth ts. 200. Father of 7 children, he has married off his our daughters, thanks to his new found vocation In Veerapandi alone 45 people like Nanjan have been ffered sheep loan, among them 38 are Harijans □

YOJANA
WISHES ITS READERS
A
HAPPY
NEW YEAR

Self Employment For Rural Women

SRI Avinashilingam Rural Centre of Coimbatore district has been helping backward areas with various schemes in coordination with many Central Agencies like S F D.A, I.R D.P, nationalised banks etc.

In Muthukallur Harijan Colony, rural women are given employment opportunities with the cooperation of Annure Sarvodaya Sangh. A Khadi Spinning Centre has been started with three lady trainees which include 10 Scheduled Caste women. The ladies get themselves trained in spinning Ambar Charka and after the training period they will be able to earn sufficient income by adopting it as a family profession □

A trainee with Ambar Charkha.

YOJANA

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Photographic Officer : P. K. De
Cover Design : P. K. Sengupta
Advt. Manager : T. R. Maheshwari

Editorial Office :

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EDITORIAL

THE EXPORT CHALLENGE

The days of plentiful foreign exchange are over and the days of deficit have come. The gap in the balance of payments in the current year is likely to be Rs. 4000 crores, which is nearly thrice that in last year and more than six times that in 1978-79. The impressive growth rate of 24 per cent in our exports in the earlier years has declined to 6 per cent in the past three years. India's share in the world trade and in the exports of developing countries has also been declining.

The enormous increase in the price of imported crude oil and petroleum products is the main reason for the adverse balance of trade. This bill has increased from Rs. 2900 crores last year to about Rs. 5000 crores in the current year and is likely to rise further as a result of the recent hike of 10 per cent in the crude price announced by the OPEC. The outgo on this account alone amounts to about 70 per cent of our total export earnings. Secondly, our imports have been increasing; they were about 25 per cent higher in 1979-80 and this trend is likely to continue. Incidentally it may be mentioned, that the policy of liberal imports adopted about two years ago has also contributed to the fast depletion of our foreign exchange reserves. Apart from items needed for economic development, we have also been compelled to import some consumer items which are in short supply. For example, the import of edible oils alone would cost us about Rs. 600 crores in a year. Thirdly, there has been a decline in the inflow of remittances from abroad. Another important reason is the tendency of our industrialists to sell bulk of their products in the protected domestic market and export only the marginal surplus. Because of this tendency they are not modernising industries to keep abreast of world standards. There have also been complaints of our exporters not maintaining uniform quality of their products and of not keeping to the delivery schedules. Recently, complaints were also raised in the Lok Sabha about corruption among some officials of the inspection machinery. Moreover, our exports could not increase to the desired extent due to the shortage of power and vital inputs like steel. The global inflation and growing protectionism among the developed countries have also contributed their share to our balance of payments crisis.

We have now no other go but to increase our exports. For this, a basic change in our national attitude—i.e., instead of exporting the surplus, to set a sizeable part of our production apart for exports—is necessary. We have to diversify our efforts by increasing the export of non-traditional items and exploring non-traditional markets in West Asia, Latin America and Africa. The agricultural production should be further increased so as to export more foodgrains and to become self-sufficient in edible oils and pulses. We should also aim at progressively reducing the import of consumer items like steel, cement, aluminium and edible oils and restrict our imports to capital goods and new technology. While petroleum imports cannot be avoided, we have to conserve it further and also intensify our efforts to explore more indigenous oil sources. The government has recently taken steps to remove certain statutory constraints on industries and to provide new incentives so as to expand exports. The

(Contd. on Page 33)

Putting Brain Drain to Work for India

S. P. K. Gupta*

YELLAPRAGADA SUBBAROW, the little-known Harvard biochemist who later gave the world folic acid vitamin, tetracycline antibiotics and antifolic cancer drugs, wanted in the late 20s to return to India. He had already made outstanding contributions to an understanding of how our muscles work and he thought he can continue his researches at Calcutta if he were to get the biochemistry chair at the All-India Institute of Hygiene and Public Health then being set up with Rockefeller Foundation's help. The Foundation was supporting SubbaRow in Harvard and recommended him to the Government of British India. Dr. W. E. Gye, British cancer fighter visiting Harvard, wrote in support to Lord Birkenhead, Secretary of State for India.

SubbaRow was interviewed by a succession of high officials of the Indian Medical Service including the director-designate of the Calcutta institute and was told to wait until the proposed constitutional reforms went through giving quasi-autonomy to India.

SubbaRow had gone to the United States to train himself for medical research in India. He was now forced to remain in Boston holding mean staff positions at Harvard until a drug company discovered him, built a research laboratory, put him at its head and enabled him to fashion weapons for medicine's flight against a whole range of fevers and cancers.

How little things change in our country !

Dr. S. Chandrasekhar

The constitutional reforms were finally put through in 1935. Two years later, Dr. S. Chandrasekhar returned from Cambridge as a Fellow of the Royal Trinity College, tried a whole year for a position in the Madras University and left for an assistant professorship at the University of Chicago where he became an astrophysicist of world renown.

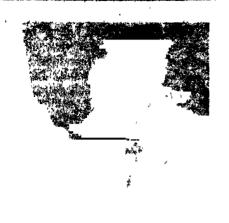
Then in 1947 the British left and independent India had in Jawaharlal Nehru a prime minister keen on fostering the scientific temper. But none of the chain of research laboratories he got built would accommodate Dr. Hargobind Khorana when he returned with a Cambridge doctorate. He had to migrate in 1949 to Canada for working at the National Reseach Institute until the University of Wisconsin (USA) encouraged him to shift to its Institute of Enzyme Chemistry to continue the genetic research for which he won the Nobel prize in 1968.

India is paying dearly for this failure to recognise its brilliant scientists. It has to import or manufacture under costly licences the vitamins, antibiotics and other drugs SubbaRow fashioned. Space research languishes in the land of Aryabhata and Bhaskara which are now names of Soviet-launched satellites. And we will have to pay heavily again when genetic engineering yields commercial dividends.

True, we have tried to entice our brilliant scientists after they became famous but without success because we have been either too late or offered them too little of an opportunity to continue their work in India.

When popular government was installed in Madras after the War, two successive health ministers, Dr. T. S. S. Rajan and Mrs. Rukmini Lakshmipathi, offered SubbaRow the temporary post of principal of the School of Indigenous Medicine. Amidst his work introducing new vitamins and drugs into medical practice, SubbaRow said he would return to India to die once his work in the States was accomplished. He did not take the opportunity in 1947 to become an American citizen but died in America itself suddenly a few months later.

Yellapragada Subba Row

*Special Correspondent Press trust of India

Dr. S. Chandra Sekhar

Dr. Chandrasekhar was invited in 1968 to take over as chairman of the Atomic Energy Commission. He declined, telling the Prime Minister, Mrs Indira Gandhi, that he was "a mere mathematician" although AEC was then responsible for space research and despite the precedents of theoreticians heading nuclear and space research establishments in USA. Dr. Khorana was offered in 1965 the directorship of the National Biological Laboratory which CSIR wanted to create for him at Palampur. He asked for time to complete the work in hand and CSIR agreed to wait but Khorana acquired shortly before his Nobel bid the American citizenship as had Dr. Chandrasekhar before the AEC offer.

Cheap Recruiting Ground

If lack of facilities caused the brain-drain before Independence, the brand new edifices since then to science have not succeeded in reversing the flight of talent from India. Quite the contrary. For our research establishments and universities have become cheap recruiting grounds for high technology oriented Western countries and for the newly affluent Gulf countries eager to provide basic medical and engineering services to their populations.

"Miss Bhagyalakshmi" of Gudivada in Andhra Pradesh is typical of the new Brain-Drainees. She paid Rs. 1.5 lakhs for a seat in a donation college. She flew with her MBBS to Colombo to beat the Indian ban on ECFMG required by USA of aspiring emigrant doctors. Flunked, she jetted to London but could not qualify in the language test given by TRAB, Temporary Registration Assessment Board, and would not be taken by the National Health Service. She paid touts Rs. 10,000 to get an Iranian visa and worked in primitive conditions at a village near Khorramshahr. She repatriated home six-figure amounts each year and made one trip to India fully bedecked in gold jewellery. Then came the Iran-Iraq war. She was killed while fleeing Khorramshahr during a shell attack.

The true story of this young doctor, whose name has been disguised, can be dismissed as a personal tragedy with no national consequence. But it is a story that is heard, may be without its personal tragic end, all over the country today with minor variation of detail.

One year early in the 70s, 85 of a Gujarat medical college's graduating class of 125 chartered a bus two days after results were announced and made straight for Bombay to apply at the US consulate for visas.

Cheaper to allow immigrants

The United States finds it cheaper to allow immigrant doctors instead of building and operating at an annual cost of eight million dollars each the extra dozen medical colleges it would otherwise need to prevent severe reduction in services at its big-city hospitals. Over 6000 Indian medical graduates were counted in USA in 1972 and their number is increasing exponentially despite the ban on ECFMG in India. There is also a steady small flow of Indian doctors into Canada.

The National Health Service of UK will collapse if foreign medical doctors employed in the more junior hospital and general practice posts are to leave. There were 7000 Indian-born physicians in UK in 1970 and their number steadily increased until 1975 in which year 1250 more entered the isles. UK withdrew recognition from 55 Indian medical colleges in 1976 but an Indian doctor can still enter NHS after passing the TRAB tests.

An increasing number of Indian physicians have gone to Saudi Arabia, Kuwait, Bahrain and other Middle East countries since 1970, and to Kenya, Tanzania, Uganda, Ghana and other African countries which have Indian minorities.

The same is true of nurses, engineers, architects, mathematicians and other scientists, economists and social scientists as well as middle-level experts. The

Dr. Hargobind Khorana

United States alone took some 7000 Indians in a single recent year. Canada, UK and Western Europe attract high-calibre and other experts. United Nations Development Programme draws its fourth biggest group of experts from India, recruiting over 10,000 from this country in 1975 alone.

Great Hunt

East Europe, particularly Romania, has joined the great hunt for Indians. With the blessing of our government, these countries have since mid-70s recruited technicians from Punjab and Haryana for factories facing manpower shortages.

All this has led to macabre situations. While Indian doctors and nurses minister the affluent westerners and oil-rich Arabs, there are only 22 doctors and 15 nurses for one lakh population in their home country. Primary health centres function with one or two physicians or none.

Most of the graduates of architecture schools are lost to India. A count in 1975 showed that for 5000 left in India 3000 had gone to take up jobs abroad.

Many top scientists and mathematicians have left and those remaining are short in national spirit so much so science and mathematics are in a sorry state of development, one of them recently told the Indian Science Congress.

Those who have left or want to leave rationalise by referring to lack of sufficient opportunity, equipment or facility for research and experimentation, to the want of a scientific temper and to the stranglehold of old scientists turned bureaucrats.

Involved Bureaucratic procedures

Dr. Chandrasekhar has this to say : "The intolerance of older scientists in dealing with the younger generation is the main reason for brain drain. The deeply entrenched bureaucracy keeps itself intact through involved bureaucratic procedures. And bureaucracy blinds people in position to the extent they would not recognise talent in anyone not on par with them. Total abhorrence of bureaucracy in the academic world and frank recognition of talent irrespective of age and status have played a key role in the great progres achieved in industry and science in USA."

That all this provides only a partial explanatio was shown by a survey conducted by the US Nationa Science Foundation among Indian scientists an engineers who emigrated to America between 1966 an 1970. The Indians were also motivated by desire fo higher standard of living, hope for better opportunitie for their children and curiosity about the America way of life. Desire to develop professional skills cam last on the motivation scale.

An inter-ministerial group at the Centre also foun that Indians are enticed by attractive scholarship self-supporting jobs during training and higher pa offered by developed countries.

Those who have chosen to remain or have no been able to go therefore dub the lucky as "mercen aries"—an epithet once hurled by a national news paper at Dr Khorana and his "ilk."

Patriotic Spirit of Chinese

This newspaper compared them with Chien Sa Chiang and his 38 brilliant scientists who made th Chinese hydrogen bomb and Tsien Hsue-shen and hi dedicated 15 colleagues who made the Chinese inter continental rockets. Trained in US, France, UK an West Germany for ten to fifteen years or more, the returned when their country needed them althoug Communist China was a different proposition than th Kuomintang China they had left. They went back des pite pay, work conditions and equipment comparin poorly to what they were accustomed in the West And they assumed responsibilities as leaders of scienc and progress in China.

In sharp contrast, the incentive of a science poo position and duty exemption on scientific equipmen they bring have only served to benefit those who woul have come back to India anyhow for personal reasons

An angry Mrs Gandhi fulminated in March 197 at the 21st convocation of the Kharagpur IIT : "The think or pretend they have a grudge against India against the Indian government and against the India society. They reject our entire tradition." Her ple has gone unheeded that scientists and technologist

INDIANS ABROAD

According to Indians Abroad Section of the National Register of the Scientific and Technical Personnel, the number of doctors, engineers and scientists, who have gone abroad and returned is as follows :—

	Doctors			Engineers			Scientists		
As on	Enrolled	Returned	Percentage returned	Enrolled	Returned	Percentage returned	Enrolled	Returned	Percentage returned
1.1.1979	4389	2267	51.65	8346	3851	46.14	7223	3609	49.96
1.1.1980	4510	2301	51	8457	3891	46	7422	3678	49.55

(Cumulative figures with 1958 as base-year)

As reporting to the Register is voluntary, the actual number of doctors, engineers and scientists could be as high as five times the actual figures.

should not use their degrees as passports to jobs abroad but should use their knowledge and experience to improve the lot of their people.

On the other side, Mrs Gandhi herself admitted in the Rajya Sabha also in 1976, those resigning their jobs on selection by UPSC have had to face, on coming here to take up jobs, court injunctions granted to those whose promotion opportunities were threatened.

Dr Chandrasekhar has referred to an eminent Indian science official who opened his speech to a gathering of Indian students at the University of Chicago in 1978 with the remark : "Back in India, if anyone boasting of an education abroad came to see me, I make a point of keeping him waiting for an hour."

India is paying dearly for failure to recognise its brilliant scientists.

Official Seal of Approval

Moreover, a 1974 proposal before the Union government for appointment of science attaches was quitely shelved. They were to help bring back scientists and technologists with entrepreneurial skills. Instead, there is now a Foreign Assignment Section in the Union Department of Personnel which has served to systematise and put the official seal of approval on brain drain.

An inter-governmental agreement of 1975 provided for the assignment of some 16,000 doctors, engineers, scientists and lower-level technicians to Iran for fixed periods on condition they repatriated part of their savings through official channels.

Delegations came that year from Iran as well as Zambia, Fiji, Nigeria, Iraq, Libya, Jamaica, Tanzania, UAE and Yemen to recruit personnel. Official foreign assignments are done not only under bilateral agreements but under the auspices of UN and its agencies, the Colombo Plan, the Indian Technical and Economic Cooperation Programme and the special programme for Commonwealth Assistance to Africa.

Indians officially assigned by the parent government or directly recruited by host governments are running a child care centre in Kabul, training railmen in Zambia, taking electricity to Iranian villages, building railway networks in Iraq and Syria, manning oil refineries in Syria, setting up fertilizer, cement and textile plants in West Asia, making machine tools in Algeria and running paper mills in Kenya. The only redeeming factor is that some of this has taken place under Indian consultancy firms or joint ventures.

The question is asked in the United States and elsewhere whether our economic growth is not being held back because of this drain of our educated manpower. Our continued purchase of Western technology shows the answer to be an yes. We used to export raw materials cheap and import manufactured goods at high cost. The West now gains doubly by getting technologists trained in India with little or no cost to itself and exporting to us technology developed often with the help of our children.

Central Agency

And now what has been systematized is to be institutionalised. There is a move to create a central agency with branches all over the country for recruiting work forces for employment abroad. The Indian Immigration Act is to be amended for this. The central agency is meant to protect the welfare of Indians working in foreign countries. But it is problematic whether it can prevent, for instance, the use of Indian doctors as cheap medical labour in the United Kingdom or assure decent living conditions such as have been found wanting for Indian workmen in some of the Gulf countries.

UN's Economic and Social Council and Commission for Trade and Development have told developing countries how they are now being exploited by the affluent Western countries. The United States, Canada and UK gained from brain drain in the 60s an estimated Rs. 40,000 crores which was far more than the development assistance they extended during the decade to the Third World countries. The intellectual life and research capacity of these and other affluent countries were further enriched. Their supply was augmented of trained personnel at low cost particularly for critically important positions in the health services. They invested nothing on those the poor countries educated with a large slice of their annual budgets only to lose a growing number of them to the rich countries.

When an Indian doctor settles down in America, India loses Rs. 3.3 lakhs and USA gains Rs. 51.7 lakhs. In all, India lost an estimated Rs. 787 crores in 1976 to USA because of the emigration of its scientists, engineers and doctors to that country.

Plugging Brain Drain

Can anything be done at all to plug the brain-drain put at the colossal figure of more than a lakh of Indians currently abroad ?

Perhaps nothing since, among other things the Supreme Court has upheld the citizen's fundamental right to leave the country. And qualified men and women will continue to wish to leave so long as they cannot get jobs within the country or at best can get jobs not commensurate with either their qualification or their expectation of pay and perquisites.

India has—after USA and USSR—the third largest reservior of qualified scientists, engineers and other professionals. And it continues to produce each year some 36,000 of them—15,000 engineers, 11,000 doctors and 10,000 scientists with post-graduate qualifications. And it cost in 1976 Rs. 1.5 lakhs to train a doctor, Rs. 40,000 to turn out an IIT graduate and Rs. 3500 for a Ph. D.

Our research establishments and universities have become cheap recruiting grounds for high technology-oriented Western Countries.

The UN Institute for Training and Research has observed that a country will lose when it educates more than its economy can absorb. India is not over producing educated manpower considering the needs of its vast population, but unemployment and underemployment of its educated force are undisputable facts. While no reliable statistics are available, an engineering organisation made a check in the mid-70s and said there were some 76,000 unemployed engineers

17 DPD/80—2.

And a WHO study has claimed that 80,000 among India's 130,500 physicians in 1972 had had to be regarded as "surplus" because the population was too poor to pay for private medical care and the government was providing less than Rs. 10 per capita for public health services.

Physicians are certainly not surplus in India with only 22 of them available for one lakh population but, as an UNESCO study has shown, they find it difficult to fulfil their expected role because of their uncritical acceptance of Western standards of training, work and work conditions.

Catering the Wealthy only

The education imparted to an Indian medical student is so divorced from the socio-cultural conditions that he seeks to enter either the international professional market as a second-class citizen in some Western country or the "little golden ghettos" within the country to cater to the needs of the wealthy.

There is a consequent reluctance to help the government discharge its responsibility for providing adequate community medicine particularly in the villages many of which do not have "even a hut to work from" let alone medicines and equipment. And yet Indian doctors have been found living in tents on the open in Algeria and commuting to dispensaries in buses because of the quick money they can make.

What is true of the products of elite medical institutions is true also of the graduates of elite engineering and science institutions. Architects want to design low-ceilinged and windowless buildings with air-conditioning and round-the-clock artificial lighting. Scientists when they remain in India want sophisticated equipment for research tied to those manning the frontiers of science in the West.

In such an ideology lacking situation, there can be but little response to appeals for patriotism and national duty.

Some of the solutions offered can only aggravate the brain-drain. During his last visit to India, Hargobind Khorana suggested creation of sophisticated research institutions to hold brilliant scientists within the country. One such, Tata Institute of Fundamental Research, was created in 1945 in the hope that "when nuclear energy has been successfully applied for power production in say a couple of decades from now India will not have to look abroad for its experts but will find them ready at hand". We actually find now an increasing number of TIFR graduates working on nuclear programmes in a dozen countries around the world while India's own programme languishes.

Bureucracy blinds people in position to the extent they would not recognise talent in anyone not on par with them.

The All-India Institute of Medical Sciences too has not served the original national objective and the proposal to create even higher medical qualifications within the country so that Indian doctors may not have to go elsewhere in search of them too is bound to be counter-productive.

Reversing the Situation

There appears to be no hope unless the nation reverses the situation that has been created since the years of the Third Plan. As noted by Prem Shanker Jha, the interaction between sectors of the economy has slowed down. Each sector is developing in compartments with widely varying productivity rates. Some of them are export-oriented or otherwise catering to the demands of the affluent nations. Result is the classic under-developed economy delineated by Gunnar Myrdal and Samir Amin.

Brain drain can only be checked within the context of a developed economy where changes in one sector immediately cause changes in the others, where a technical breakthrough in one industry raises wages and opt for labour-saving devices of their own.

When an Indian doctor settles down in America, India loses Rs. 3.3 lakhs and USA gains 51.7 lakhs. In 1976, India lost an estimated Rs. 787 crores to USA because of the imigration of its scientists, engineers and doctors to that country.

Having opted for large investments in higher learning at the cost of universal education, India can ill afford to lose its educated manpower to stoke the economies of the affluent nations.

While waiting for better planning to knit the economy into one harmoniously developing whole, some palliatives can perhaps be taken to put the brain-drain to work for India.

Shri V. N. Gadgil, former Defence Production Minister, has suggested that none should be permitted to emigrate for five years after qualifiying and that those emigrating thereafter must be required to return after five years. The Supreme Court might well accept these as reasonable restrictions on the citizen's fundamental right to leave the country.

Philippines Plan

Perhaps these conditions could be imposed through a modified Philippines Plan for preventing brain-drain. Candidates for medical course are nominated and financed in the Philippines by Barangay, the village council, on their contracting for two years of service in the village for every year of training.

The proposed central agency for foreign assignments under the Immigration Act could be required to recruit only those who have done five years service in the rural community or other high priority areas, agree to work abroad for five years under contract to the agency and to return home thereafter with liberty to work in non-priority areas if they so desire.

The American Peace Corps model is there to be adapted to suit India's domestic and foreign policy needs. Only, it will not be a voluntary corps. And it will not be only for service abroad. We can have it if the nation has the requisite political will. □

Follow-Up of Brandt Report

V. R. Panchamukhi*

IT is customery to classify the world into two parts as East and West according to the aspects of tradition and culture Sometimes, the terms Western Bloc and Eastern Bloc are also used to signify respectively market-oriented and centrally planned economies. In recent years, however, a new vogue has emerged in the context of international debates and negotiations, which consists of classifying the world economy into two blocks—North and South—according to the level and stage of economic development and industrialisation. North stands for industrially advanced countries such as USA, Canada, UK and the Socialist countries such as USSR. With the exception of Australia and New Zealand, almost all the rich countries which are termed as North are located in the northern part of the globe. As against this, the term South refers, to the poor, less industrialised countries broadly located in the Southern part of the globe, such as Latin American countries, African continent, countries of Asia and far east.

North-South terminology has become symbolic of the wide gap that exists between the rich and the poor, industrially advanced and industrially backward countries of the world.

Present contrasts between the north and the south are quite appalling. Population in the north is about one-third of the population in the South, while the per capita GNP of the former is about 12.5 times that of the latter. The North including eastern Europe has a quarter of the world's population but enjoys four-fifths of world income. Over 90 per cent of the world's manufacturing industry is in the north which also has a major control over technology and investemnts. The South has the enormous problem of human destitution whch is now estimated to reach the level of 800 million people who barely survive under acute poverty. It is in the group of Low Income Countries even within the South, to which India belongs, more than 600 million people, i.e., more than fifty per cent of the total population of the low income countries, live in absolute poverty. Contrasts between North and South are appalling also in respect of the structure of trade, literacy, health facilities, housing, use of energy resources, etc.

Experience of the last two decades has shown that the gap between the North and the South has been widening and the world economic order of this period has not contributed much to the problem of bridging this gap. Further in the recent years, a few global issues, such as oil price hikes and the consequent instability in the world economy, huge accumulation of reserves by the OPEC and thus a virtual shift in the centre of gravity for flow of financial resources, breakdown of the Brettonwood system and the consequent floating of major currencies, to name only a few, have all intensified the urge for search for a new international economic order in the decades of the 80's and 90's. The recent efforts of the various UN agencies in fostering a new international economic order have made extremely faltering progress and disappointment set afoot in them has tended to discredit the organisations which have taken the initiative and dampen the hopes of survival for the poorer sections of the world society.

Experience of the last two decades has shown that the gap between the North and the South has been widening and the world economic order of this period has not contributed much to this problem of bridging this gap.

It is perhaps with the realisation of the bottlenecks faced by the international agencies, that an Independent Commission on International Development issues under the chairmanship of Willy Brandt, former Chancellor of the Federal Republic of Germany, was set up in 1977. The Commission finalised its consensus report under the title—"North-South : A programme for Surival" and submitted the first copy of the report to the Secretary-General of the United Nations in December 1979. The Brandt report brings out that interdependence and mutuality of interests are the basic features of the north-south relations and that the most basic of all needs is the right to participate in change and share in the outcome. Based on these and other principles, the report makes a number of recommendations of far-reaching consequence. (For more details of the Brandt Report please see Shri L. K. Jha's article in 'Yojana' issue dated October 1, 1980).

New Situation

Even though the Brandt report has the merit of being comprehensive on the various aspects of the north-south debate, it becomes necessary to go beyond Brandt on a number of issues so that one could derive meaningful operational action programmes. Take for instance, the question of massive resource transfer.

The proposal of an international system of universal revenue mobilisation based on a simple criterion of national income without recognising the pressures of population and the urgency of development seems to be not justifiable. It is doubtful whether the innova-

*Professor, Institute of Economic Growth

tive ideas such as levies on international trade contained in the report, could be put into practice in the next five years.

Further, it is necessary to recognise that the socalled present 'North' may not be in a position to rise to the challenge in view of the pressures of domestic and international imbalances within their own economies. Hence, the burden of guaranteeing adequate resource flows into the south, has to be shifted to the new centre of gravity of resources, viz., OPEC. There is need for linking the strategy of massive resources transfer with that of restructuring of world production and recycling of petrodollars. A viable operational model in this regard could consist of three elemtns : (a) the petro-dollars are given guarantees against risks by the international financial institutions, (b) they are directly invested in the export-oriented industries in the south, which manufacture those export products that are vacated by the North in favour of the South; and (c) North undertakes to roll back protectionism and adopts effective adjustment assistance schemes to vacate some industries in the lower stages of sophistication of technology and to use the resources thereby released, for investment in more productive and technologically more sophisticated lines of production.

This three-pronged strategy should become an important part of the emergency programmes (of the Report).

One important area which is unfortunately not recognised in the Brandt report and which is of subtle but fundamental nature, is regarding the gap between the intellectual preparedness of the North and that of the South in international negotiations. The negotiators of the South have very poor analytical support of their policy options and strategies from the view point of their own interests and aspirations. Much of their argumentation is derived from the well-documented studies of the North, which obviously focus on the interests of the North. To eliminate this basic weakness of the South, there is need for creating some special centres of research on the issues of new international economic order, which conduct detailed analytical studies to assist the negotiators of the South.

Brandt-Report has provided a new opportunity for North-South dialogue and India has a major responsibility in adopting suitable follow-up actions.

As part of the follow-up action on the report, a German organisation called Friedrich Ebert Stifting, one of the oldest politico-economic foudations, started by Friedrich Ebert the first President of the German Republic (1871—1925) has taken the initiative to organise several regional level follow-up conferences, two of which have been already held—one in Rio de Janeiro in August 1980, and the other in Bangkok in October 1980.

The recent conference in Bangkok which I had the privilege of attending, was indeed a very successful follow-up meeting. The participants included Ministers, members of Parliaments,, senior government officials representatives of trade unions, media persons, economists and other social scientists.

India's Responsibility

However, it also left a lingering thought in the minds of many as to whether the north views the Brandt report as a new opportunity for stalling action but still keeping its image aloft as a champion of the North-South dialogue. Willy Brandt, would not, of course, like his report to become a stooge to the North in this respect. However, if one wants to avoid this eventuality, one needs to initiate a series of urgent action programmes in quick succession so that the foundations of the eighties are laid on sound lines to avert the crisis of the coming decades.

In order to generate more effective debate within the outh, it is necessary to dispel the mistaken notion that exists in a number of countries of the South—India is no exception to this—that North-South dialogue is the concern of the elite and the bureaucrafts and that it has nothing to do with the internal problems of the economy, such as poverty, unemployment, and inflation.

The next task is to try to give a concrete content to the global notions of mutuality of interests, energy strategy, technology transfer, restructuring of world production and trade, etc., so as to make them operationally relevant to the individual members of the South and the North. This may imply collaborative effort—desk research as well as field work—on the part of the North and the South. A typical example in this context is the exercise of Smallman committee, constituted a few years ago, by the EEC and supported by a group of experts in India. Smallman committee was entrusted with the task of identifying the specific product groups which are amenable for mutual cooperation in production and trade between EEC and India. This committee conducted detailed techno-economic survey of specific Indian industries before making its recommendations. It would be useful to commission many more of such joint expert committees so that image-gap between the North and South could be bridged as also specific programmes with a time frame for action could be identified for restructuring of world production and trade.

To sum up, Brandt Report has provided a new opportunity for North-South dialogue and India has a major responsibility in adopting suitable follow-up actions. Her complacency could be costly both to the interests of the South as also to her own self-interest. India should combine the initiative of a leader and the behaviour of an equal partner in the tasks of the South, so that hopes of averting the inpending world economic crisis in the coming decades could be sustained and backed by effective action programmes.

(Courtesy : A.I.R.)

Three Decades of Dairy Development

Dr. D. R. Shah*

Butter packing machine at work in Amul, with loaded trolleys

A perusal of the documents shows that dairy development process had commenced with the main objective of increasing the supply of milk to rapidly developing urban centres of the economy. Noticeable marketing gap for milk faced by the producers was the added reason. As a result, earlier three Plans very heavily emphasised the establishment of milk schemes and product factories in the urban areas. Excepting isolated schemes of improving dairying such as Intensive Cattle Development Scheme, Key Village Block schemes, intensive fodder development and fooder seed production farms etc., half-heartedly implemented by departments of the government, an integrated approach to milk production was almost absent. Dairy development could not receive much needed resources for about 20 years.

This is indicated by the fact that with an investment of about Rs. 821 million, allocated resources to dairy development were merely 0.3 per cent of total planned outlay incurred during 1951-1969. During the period of Fifth Plan and Sixth Plan the proportion was raised to around 1.11 to 1.18 per cent of total outlay. Even though more and more funds had been allocated the resources were far inadequate in the context of giant task of modernisation of dairy industry.

The story of planning for dairy development in the seventies was completely different We adopted rational and integrated approach to dairy development in this period. This was reflected not only in the relatively high proportion of planned outlay for dairy development and animal husbandry but also in terms of objective and approach. We bypassed the policy of developing the dairy sector as the natural consequence of development of dairying as an allied sector of growing agriculture. Instead of that, we pinned our hopes on dairy development as an instrument of economic well being of weaker sections. We selected the strategic approach of developing dairying through small and marginal farmers and landless labourers on the lines of recommodations made by National Commission on Agriculture. Further we could learn a lesson from our experience of twenty years of dairy development planning that one of the most important causes of the failure of our planned effort was the insensitivity of the bureaucracy to identify the problems of milk producers and rescue them with real aids which ultimately failed the programmes and projects to improve milk production.Similarly the same bureaucratic band of managers of Milk Schemes also reflected their dismal failure in terms of huge losses. This experience of planning for developing efficient dairy sector invited a great policy shift in the approach to dairy development. The success story of Khaira District Milk Producers Cooperative Union had already drawn the attention of the policy planners and it was visualised that in order to facilitate the efficient operation of these schemes the management should be transferred from "departmental" to "Cooperative Character". In fact, the dairy development through cooperatives became an approach to the development of dairy industry. However, to multiply Anand for integrated dairy development was the task beyond the capacity of the Indian government in terms of huge monetary resources and man power. This problem was resolved by acceptance of the project of 'Operation flood' designed by National Dairy Development which was approved by the World Bank. The Project aimed at multiplicity of Anand pattern of co-operatives in the various States of India with the available gift of about Rs. 116.4 crores worth milk powder and butter oil, The phase was successfully completed and on the same lines second phase on larger scale has already been implemented with an investment of about Rs. 485 crores covering ten million producers of 155 districts all over the country.

Achievements

Although two decades of dairy development had not recorded much success, the third decade compensated well and in the 80s we are entering the promis-

*Lecturer in Business Economics, Faculty of Commerce, The M.S. University of Baroda.

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ing stage of dairy development. We have already achieved the "Take off" stage in dairy development process the evidence of which could be briefly stated as follows:—

Institutional Revolution. An 'Anand' model of co-operative organisation which integrates the task of promotion of production and procurement along with modern facility of processing and marketing through two-tier structure operating at village and district level is not completely unknown to many parts of India. Today we have 9000 'Anand' pattern co-operatives at village level covering 1.3 million milk producers well spread in the 18 hinterland milk sheds of 10 States of India with an estimated 2.1 million animals in the co-operative ambit.

Breakthrough in Milk Production. Milk production chart of first twenty years in India had recorded a very poor performance of merely 0.7 per cent of growth with number of years of downward trend and stagnanat levels of production. However, during the seventies from about 21,200 thousand tonnes of milk production in 1968-60, we could reach the level of 23,200 thousand tonnes in 1973-74 and draft plan of 1978-83 estimated the likely level of output at the rate of 27.5 million tonnes. Thus, we have achieved a breakthrough in the production.

Marginal Rise in per capita availability. During the period 1950-51 to 1970-71, while our production was stagnant, population increased at the rate of 2.5 per cent and as a result the per capita availability of 139 grams in 1951 was reduced to 105 grams in 1971-72. Thus, instead of moving towards the minimum requirement of 284 grams per capita per day we moved away. This dismal picture of percapita availability could be reversed due to positive change in the production performance as a result, during the period of 1970-79 per capita availability increased to 121 grams. In both the terms of minimum requirement and recorded level of 1951-52, the per capita availability is not satisfactory but we have to appreciate this matter as an important achievement in the context of rise in the population.

DMS Milk Plant.

Aarey Milk Bottling Plant, Bombay.

Process of Modernisation. Process of modernisation of dairy sector is evident in the form of production and distribution of technical inputs as well as establishment of the modern processing and product manufacturing plants. Similarly, modern infrastructural facilities were also estimated on a large scale particularly with the available resources of Operation Flood Project. Overall achievement of the sector is also quite remarkable. The total number of dairy plants increased to 186 comprising a liquid milk plant, 26 milk produing factories and 68 pilot milk schemes. All these dairy plants are functioning in public and co-operative sectors in the country, with an increased average daily output of about 55.28 lakh litres of milk against the installed capacity of 84.87 lakh litres. The utilisation of the installed capacity of the dairy plants has recorded to the level of 65.15 per cent of the total installed capacity.

Modern Marketing Innovations

Modern marketing innovations in the various areas of milk distribution and marketing have been developed to improve the efficiency of dairy industry. For example, need for stable supply of milk gave rise to "Mother Dairy", regional variations of milk production led to the implementation of "Milkgrid" and increasing distribution cost of milk forced the use of "Modern Milk Vending Machines". These innovations were profitably used in 1970s and that has strengthened the base of Modern dairy sector in India.

Development of Organised Sector

Development of organised sector in the area of milk produucts industry has not received due attention it desires. It may be worthwhile to note that as much as 85 per cent to 90 per cent of the milk products are manufactured in the organised sector, with co-operative dairy units dominating the scene. However, the milk marketing is still highly unorganised and dominated by private traders, with merely 7 per cent of total milk marketed by organised sector. However, in the four

metropolitan cities which represent the 25 per cent of the total demand, the process of eliminating private traders has already set into motion.

Reduction in the Import Dependence

The rapid modernisation has led to the remarkable product diversification in the 1970s. It is now producing a large number of milk products. This has helped the process of import substitution which is indicated by the fact that according to a study carried out by the Central Statistical Organisation, the share of import in the total availability of milk products which was about 30 per cent in 1960-61 gradually decreased to 6 per cent during 1975-76. The import of 54,000 MT of milk powder gradually reduced to 13,000 MT.

Future Prospect

The prospect for the Dairy Development seems to be bright. However, the extent of success will depend upon the capability of the nation to solve the crucial growth problems in the form of (i) substantial improvement in the milk yield (ii) adequate supplies of feed and fodder which will be more pressing when we opt for "crossbred" animals and (iii) reduction in the cost of production of milk.

On the basis of the effective implementation of the Operation Flood-I, we have every reason to hope that the larger scale project of Operation Flood II with about Rs. 485 crores worth investment will be successful to resolve growth riddles and put our dairy industry on an advanced stage.

Jute Production and Paper Industry

Jatindra Nath Deka*

THE jute cultivation is mostly done in the North Eastern Region of India and in the states of West Bengal, Bihar, Orissa and Uttar Pradesh. The seeds of jute are generally sown in the months of March-April and harvesting is done in the months of June-July. Jute plants are kept under water for a few days before separating the bast fibres from the jute sticks. The bast fibres obtained from the jute cultivation are mostly used in making household appliances like gunny bags, rope, colouring cloth, bed rope, various accessories used in cultivation and handloom weaving etc. This fibre is also used in heavy pattern boards, heavy duty shipping tags and paper making.

The annual production of jute stalks, obtained after removing the bast fibres from the jute plant, is about 3.5 to 4 million tonnes, out of which about 2 to 2.5 million tonnes of jute sticks are produced in Assam and other states of North East region. About 70 per cent of the jute sticks produced are used as fuel, 7 to 9 per cent are used in walls and roofing of houses, training of creepers, fencing etc. The rest is wasted. This valuable agricultural residue can very well be used in paper making instead. Of course ,the paper making technology from the jute stalks was a research subject till the middle of this century due to its abnormal bulk, seasonal availability, transportation and procurement difficulties. It can be used as substitute for other fibres obtained from bamboo, wood, grass etc.

The fibre length of the jute stick is shorter than that of bamboo or wood. Even then the jute sticks or jute stalks can be used for making pulp and paper. The various processes developed to obtain pulp and paper may be summarised as follows:

The jute sticks are cut into 2-3 cm. long pieces. Keeping bath ratio (wood to liquor ratio) 1 : 7, boiling is done with magnesium bi-sulphite at the temperature of 150-160 c. The cooked matter is agitated with black liquor and then screened and washed.

The pulp is then bleached in single stage bleaching by chlorine gas and then sent for refining to make paper. Of course, this pulp is weak in mechanical strength. This pulp on mixing with long fibred pulp produces good quality paper.

The other process used is semi-chemical pulping, where broken jute sticks are soaked with caustic soda of desired strength for about 4 hours at room temperature and atmospheric pressure. The fibre cementing matter called lignin is softened by soaking. This process also helps in mechanical defibration. The pulp so obtained is beaten in pocher and bleached by the help of calcium-hypo-chlorite keeping desired strength. The refined stock is sent to paper making machine. Colours and other chemicals are added to the stock. This process gives yield of about 76 per cent on oven dry basis.

The other developing process is cold caustic soda process. The detailed studies on pulping of jute sticks have been done in F.R.I., Bengal Paper Mills, and in Jute Technological Research Laboratory by various scholars like Dr. D.C. Tapadar, Dr. A.K. Sanyal, Dr. S.B. Bondopadhay, Shri Mukherjee etc. Newsprint, writing paper, wrapping and packing paper, cigarette paper, toilet tissue, grease proof paper etc. can be manufactured from jute sticks. Its action as filters in paper making is also economical.

The cost of a 10 MT|day paper plant is about Rs. 90 lakhs. Such a plant will absorb about 250 persons directly and about 1000 people indirectly. Thus a number of plants can be set up in the area of jute producing states like Assam. We hope that such a valuable agricultural residue will be used for paper making and not burnt as fuel or wasted in ponds. This will also help in improvement of village economy, increase industrial revenue, provide employment and increase Indian paper production thereby resulting in saving of foreign money. ☐

*Ashok Paper Mills, Jogighopa.

Chengottukonam Dairy Project

T. K. N. Nair*

IN Kerala, Gandhi Smarak Nidhi has embarked upon an ambitious Dairy Development Project as part of their endeavour to provide employment to the rural poor. A beginning has already been made in 1977 in Kazhakkoottam Development Block in Trivandrum District. With the Gandhi Mandir in Chengottukonam village as nucleus, three hundred small and marginal farmers have been organised into a dairy cooperative. These farmers have become owners of cows and buffaloes purchased with the financial help from Indian Overseas Bank. Small Farmers' Development Agency (SFDA) has also come forward to give one third of the price of the cattle as subsidy. A veterinary doctor working under Gandhi Smarak Nidhi is giving necessary advice to these farmers. There is also a full-fledged veterinary dispensary attached to the Gandhi Mandir.

Besides a cattle-feed depot functioning at this dairy centre, large scale cultivation of cattle feed has also been embarked upon. Under "World Neighbours" programme, fifty thousand seedlings of improved variety of cattle-feed have been supplied free to the farmers. This cattle feed is being extensively cultivated in the area.

Gandhi Smarak Nidhi has also taken over the marketing of milk produced by the farmers of the Kazhakkoottam block comprising three Panchayats

Cattlefeed nursery at Chengottukonam

A marginal farmer at Chengottukonam and his cow purchased with the aid Indan Overseas Bank and the SFDA

namely Srikaryam, Kazhakkoottam and Pothencode. Now milk is received at four collection centres daily and sold to consumers. Every month farmers are given the price of milk after deducting the loan instalments due to the Bank. It is expected that the Bank loan will be fully repaid within five years.

In the beginning (1977) only twenty litres of milk was marketed per day. By the middle of this year the daily collection of milk has risen to 800 litres. It is expected that it will rise to 1200 litres by the end of the year. Hundred more cattle are proposed to be distributed to the farmers before the year end.

As a result of increase in milk production, a new distribution centre has been opened in Trivandrum City at the Gandhi Bhavan compound. Production of various milk products like butter-milk, ghee, rose-milk, ice-cream and sweets has also started there. A Rs. 1 lakh chilling plant will also come up soon.

Of late, a welfare association of the farmers participating in this dairy product has come into existence. Under its auspices, training is given to member-farmers in milk production, cattle feed cultivation and allied subjects. Gandhi Smarak Nidhi is also sponsoring study-tour of farmers engaged in this project. Five persons are sent every year to Anand Dairy Project, Gujarat, for training.

With the successful functioning of this dairy project at Chengottukonam, Gandhi Smarak Nidhi is contemplating to organise more such projects, in Kerala. □

* Senior Correspondent, Yoyana, Trivandrum.

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Economic Development in Pakistan

Navin Chandra Joshi*

THE Islamic Republic of Pakistan, covering an area of 794,630 square kilometres, has borders with India, Afghanistan, Iran and China. According to the 1972 Census, the total population of the country was about 6.5 crores and today it is more than 7.5 crores with an average rate of net population growth at around 3 per cent and the average density at 212 persons per square mile. The disturbed political situation in the early seventies, leading to the separation of East Pakistan in December 1971, caused a major setback to the economy of Pakistan

While the average growth rate in GNP was roughly 4.9 per cent per annum during the period 1950-70. it came down to 3.1 per cent during 1970-77 with hardly any improvement in per capita income. During the latter period, taking into account the loss in real incomes resulting from the adverse movement of the terms of trade, per capita incomes in real terms actually declined. The national income of the country is more than Rs. 45.145 million at constant factor cost and more than Rs. 165,000 million at current prices. The per capita income at the current prices is around Rs. 2,837 per annum on an average.

Pakistan has made concrete efforts to develop and modernise its economy providing the material means for improvement in the standard of living of the people. Work was initiated on a number of development projects in the early fifties, though formal planning did not begin until the mid-fifties. Three Five-Year Plans were implemented during the period 1955-70, followed by an abortive attempt to implement the Fourth Plan starting from July 1970. Only limited progress could be made during the First Plan period mainly because firm political support was lacking for the Plan. Nevertheless, it did prepare the ground for subsequent rapid growth during the Second and Third Plans. "The growth in the sixties, however, was unbalanced in its effect on sections of society, sectors of the economy and geographical regions. This fostered tensions in the country and there was growing demand for enlarged emphasis on distributional aspects" (quoted from The Fifth Plan, Planning Commission, Pakistan).

During the later years, the impact of a severe international economic crisis was felt which affected Pakistan in common with other non-oil-exporting developing countries. The response was both inadequate and delayed as the nation was not fully made aware of the true state of the economy and the difficult option that it had before it. "Corrective measures requiring hard and unpopular decisions were either not taken or taken too late which magnified the problems and made the task of economic management in later years extremely difficult" (Fifth Plan document). The current Fifth Five-Year Plan was launched from July 1978, envisaging growth in GDP at 7 per cent per annum and giving a rise in per capita income of 4.2 per cent per annum.

While nearly two-thirds of the total population (of Pakistan) fall in the working ages, less than one-third is in the labour orce.

The main focus of the Plan is rapid development of agriculture based on an efficient utilisation of the considerable potential of the nation in terms of (a) land, manpower and water resources, (b) expanded and more intensive use of modern inputs, and (c) the creation of permanent institutions supporting continued progress of the economy. While the target of growth in agricultural sector is 6 per cent, it is 10 per cent for the industrial sector. While investment will increase by about 65 per cent over the Plan period, domestic savings are required to rise at an annual rate of 18 per cent. It will mean an increase in domestic savings from 7.8 per cent of GDP in 1977-78 to 12.5 per cent in 1982-83, reflecting a marginal rate of 23 per cent. Net factor income from abroad is projected to decline from 5.2 per cent to 4.0 per cent of GNP over the Plan period. Net foreign assistance is projected to stabilise at around $ 1000 million annually during the period of the Fifth Plan.

Fillip to Private Sector

Agriculture plays a major role in the economy of Pakistan. It contributes 32 per cent to GDP, accounts for 36 per cent of foreign exchange earnings from merchandise exports and engages 53 per cent of the employed labour. Major large scale industries like cotton textiles and sugar as well as medium and small-scale agro-based and cottage enterprises are directly dependent on the agricultural sector for their raw materials. Wheat being the staple food of the people in Pakistan gets the highest priority in the agricultural development strategy. The focus of the policy is mainly on achieving self-sufficiency in wheat. The area under rice crop is 2.03 million hectares. While in

*Reader, Motilal Nehru College, New Delhi

cotton it is almost the same, sugar-cane production has been assuming importance as an agricultural produce. The policy measures for agricultural sector in the Fifth Plan (1978-83) are in the direction of cropping pattern, improved seeds production, providing cheap inputs and so on.

It is significant to note that in the Fifth Plan the investment strategy in industry is to restrict the public sector primarily to the completion of on-going projects and consolidation of earlier investments while encouraging private investment to increase substantially so as to play its full role in the industrial development of the country. A notable feature of Pakistan's industrialisation has been its export orientation. Investment in industry during the Fifth Plan is proposed at Rs. 40 billion—Rs. 21 billion in the public sector and Rs. 19 billion in the private sector. The public sector investment will cater to about 70 per cent of the investment in basic industries. The first integrated steel plant to be commissioned in Pakistan in December 1980 (it is with Russian collaboration) will have a capacity of 1.1 million tonnes of steel The private sector investment will meet the requirements of cement, fertiliser projects, sugar mills, etc. An important phenomenon that stands out from analysis of industrial investment is that the ratio of private investment in industry will be nearly 50 per cent for the Fifth Plan period against 26 per cent in 1977-78. By 1982-83, the ratio of public investment in industry would come down drastically as ongoing public sector projects are completed.

Employment

The population of Pakistan is estimated to increase to 86.90 million in 1982-83. While nearly two-thirds of the total population fall in the working age group, less than one third forms the labour force. The reasons for the large gap between the labour force and the working age group are two-fold. First, all persons above 10 years are considered to be part of the working age group. Not surprisingly, the participation rates in the 10—14 years age group and even the 15—19 age group are fairly low. Secondly, the female participation in the labour force is only 6 per cent of the working age group. The level of employment in 1977-78 was at 21.84 million. It is estimated that there will be an improvement in employment situation by 25.22 million in the Fifth Plan period. The nature of the unemployment problem in Pakistan is one of the under-employment defined in the broadest sense and of mis-matched employment. More significantly, large segments of the workers are employed in low productivity occupations and do not earn an income which fulfils their basic needs or is adequate to meet them. It is felt that the very low level of participation by females in the labour force needs to be corrected.

The deficit foreign trade is projected to rise from $ 1.5 billion in 1977-78 to $ 1.6 billion at the end of the Fifth Plan. The invisible surplus is forecast to decline in real terms from $ 711 million to $ 622 million over the Plan period. The current account deficit in balance of payments shows an increase from $ 800 million in 1977-78 to $ 1 billion as an average for the Plan period. The bench mark deficit was reduced mainly by a steep and sudden jump in the level of home remittances. While rice, cloth and cotton constitute the important items of export, capital goods, petroleum and edible oils are the major items in the import protfolio. The following Table gives a picture of the balance of payments position.

Table : Summary of Balance of Payments

($ million)

	1977-78 (Estimates)	1982-83	Fifth Plan Targets
MERCHANDISE TRADE	—1503	—1614	—1659
Exports (f.o.b.)	1306	2200	1898
Imports (f.o.b.)	2809	3814	3557
CURRENT INVISIBLES	+711	+ 622	+622
Payments	831	1271	1127
Receipts	1542	1893	1749
CAPITAL ACCOUNT	+792	+922	+1037
Payments	322	403	471
Receipts (including change in Reserves)	1114	1395	1509

Pakistan's exports to India have been mainly raw cotton and rock salt but in 1979-80, they were dominated by petroleum and petroleum products which in fact were in the nature of re-export. Likewise, during that year there was an ad hoc re-export of Tor steel to India of the order of US $. 4,29,000 Pakistan's imports from India constitute a variety of items, from sugar to iron and steel manufactures. In 1979-80 their value was US $ 11,809,000 Apparently, Pakistan is having a very unfavourable balance of trade with India and there seems to be no escape from it in near future. Raw cotton was not imported from Pakistan during 1979-80 as there was a good crop in India. The uncertainty of raw cotton import from Pakistan in the wake of good crops in India makes the matters worse for Pakistan. All transactions in foreign trade of Pakistan are handled by the country's public sector agencies but on the Indian side they are both through the public sector agencies and private firms. The Government of Pakistan is thus in a position to regulate its trade with India. Cost of production is high in Pakistan and, therefore, a kind of protectionist policy is adopted as far a Indian goods are concerned. Pakistani goods can compete favourably with some other countries' goods—e.g., Japan—but not so with Indian goods. With a better political climate established in the relationship between India and Pakistan, the possibility of joint ventures could be explored on a sustained basis so that Indian entrepreneurs may be able to take interest in establishing industries in Pakistan. This might help in improving the trade balance for Pakistan.

Foreign Aid

Pakistan got aid from different countries and instituions for development work to the tune of $ 951 billion in 1977-78 and hopes to get about $ 1200 million per annum on an average during the period of the Fifth Plan. Foreign economic assistance to Pakistan started in 1950 and by the end of December 1979,

assistance worth $ 16.2 billion had been contracted —$ 3.7 billion in the form of grants, $ 0.4 billion in the form of loans repayable in non-convertible rupees (excluding $ 0.3 billion rupee loans repayable in rupees) and $ 12.1 billion in the form of loans-and credits repayable in foreign exchange. Disbursements of loans and credits upto December, 1979 amounted to $ 10.1 billion. Pakistan has repaid $ 2.1 billion, leaving a net debt (disbursed and outstanding) of $ 8.0 billion on 31st December 1979 (vide Pakistan Economic Survey, 1979-80). Besides from the UN and its specialised agencies, Pakistan has received technical assistance from the developed countries like the USA, China, France, UK, Canada, Japan, Australia, West Germany, New Zealand, etc. Pakistan has special relations with the countries of the Middle East and has received valuable economic assistance from them since 1973-74 by way of general purposes|balance of payment support, credits as well as loans for the implementation of the country's priority development projects.

The extraordinary circumstances marking the world economy since 1973 have been the increase in oil prices, inflation and recession in the developed market economies. Along with other non-oil exporting developing countries, Pakistan also suffered from these international events of exceptional nature which imposed severe strains on its balance of payments position, hampered its development efforts and led to a marked increase in the volume of international indebtedness as well as its debt servicing. The increasing deficit could have been bridged had the real dimensions of assistance not been whittled won by inflation. But the inflow of assistance from traditional sources lagged behind the decline in real terms resulting from inflation. The aid relationship has come to a point which is very nearly incompatible with the ability of the country to determine and manage effectively its development programme and priorities. It is also abundantly clear that at a time when Pakistan was making efforts to compensate adverse movements of international prices, the trend in aid inflows served to undermine the policies and programmes of the Government. Despite its efforts, the Government was pressed into contracting expensive commercial debt merely in order to make both ends meet. And even this was just temporising because each year the problem seemed to get worse.

The Table below gives an estimate of Gross National Product with sectoral contribution.

TABLE II

Gross National Product at Current Factor Cost
(Value added in million Rs.)

Sectors	1977-78 Value added	1979-80 Value added	Growth percentage
1. Agriculture . . .	49,370	66,272	17.6
2 Mining and Quarrying .	1,222	1,887	29.3
3. Manufacturing . .	25,278	33,782	21.2
4. Construction Services .	8,316	11,813	23.8
5. Other Services . .	72,376	968,50	17.5
6. Gross Domestic Project	156,562	210,604	18.5
7. Net factor income from/ to rest of the world .	+12,139	+17,013	22.2
8. Gross National Product (GNP)	168,701	227,617	18.8

Note . Exchange Value is Pakistan Rs. 127=Indian Rs. 100, or Pakistan Rs. 9.90=US $ 1.00

Pakistan's State Bank Report for 1979-80 admits that the development process in Pakistan "has not been able to make sufficient impact on the problem of mass poverty", and emphasises the need for measures in all fields " to achieve more equitable pattern of income distribution". According to Report, monetary expansion continued to be far in excess of the growth rate of the economy although its extent was slightly smaller at 19.03 per cent in 1979-80 compared with the 20.2 per cent of 1978-79. Therefore, it will be necessary to bring about a substantial reduction in the rate of monetary expansion if a further deterioration in the prices situation is to be avoided. Among the measures suggested is the reduction in the dependence of the public sector enterprises on bank financing by improving their functional efficiency. ☐

Warangal Warehouse

Rameshwaram G.*

THE origin of the warehousing can be traced to the Royal Commission on Agriculture, 1928 followed by the Agricultural Produce (Development and Warehousing) Corporation Act, 1956. As a result the Central and State Warehousing Corporations were set up all over the country. A concrete shape of objectives of 1962 Act can be seen in Andhra Pradesh, with its 34 Central Warehouses.

The administration of Central Warehouse, Warangal is under the jurisdiction of Regional Warehousing Corporation of Hyderabad. Warangal is one of the important rice and maize producing districts. The Warangal Warehouse was the first in Andhra Pradesh, established in 1958. In the beginning it provided storage facilities in hired godowns. From 1962 it has been constructing its own godowns, numbering six, with 10,502 metric tons capacity to provide storage facilities to rice, paddy, wheat, seeds, oil seeds, sugar, pulses, pesticides, fertilizers and allied commodities. And it is also offering storage facilities to all the fertilizer firms of India.

The warehouse charges depend on the nature and net-weight of commodities to be stored and has been earning increasing profits year after year. In 1975-76, the profit was Rs. 127936 and in 1979-80, Rs. 281541.

*Department of Public Administration, Kakatiya University Warangal (A.P.)

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Edible ... to Ste...

There are a number of minor oilseeds capable of yielding large quantities of oils for industrial and other uses, which would reduce the pressure on edible oils.

EDIBLE oils obtained mainly from groundnut, rapeseed, mustard, sesamum, cottonseed, linseed and copra play a vital role in India's economy. Besides, being source of facts, oilseeds are also rich in proteins and provide employment to 14 million people. But the per capita availability of these oils in the country is much below the level recommended by the health authorities. There is urgent need to increase their production.

Major oil seed crops

India is the biggest producer of groundnut and ranks second in the output of rapeseed, mustard and sesamum The major oilseeds grown in India are groundnut, rapeseed, mustard, sesamum, castorseed, linseed and cotton seed. Other oilseeds include safflower, coconut and nigerseed. In 1978-79 with the production of 6,387,000 tonnes groundnut accounted for nearly 64 per cent of the country's oilseed production and ranked first. Rapeseed and mustard with 19 per cent came next, sesamum and linseed with 5 per cent held the third place. The remaining 7 per cent was shared by castorseed, safflower and nigerseed.

The area under oilseeds cultivation increased from 9,678,000 hectares in 1948-49 to 26,508,000 hectares

*UGC Research Associate, Faculty of Commerce, Aligarh Muslim University, Aligarh.

in 1978-79—a ... production went ... period per hect... rate of increase ... less than the rat...

Groundnut is c... rat, Andhra Pra... Karnataka. Gujar... the total area o... total output of gr...

The main mu... Uttar Pradesh, F... and Haryana. U... mustard and rap... cent of the total ... most important S... mum and linseed ... largest acreage u... after Uttar Prade...

The gap betw... is widening as a ... rise in demand b... rise in real inco...

...ils : Need ...Production

...ar Alam Iqbal*

...cent increase. While the ...88 per cent during the same ...d rose by 53 per cent. The ...are yield was, therefore, much ...ease in area and production.

...l mainly in the States of Guja-...amil Nadu, Maharashtra and ...accounts for 27 per cent of ...tion and 29 per cent of the ...in the country.

...d rapeseed growing states are ...a, Madhya Pradesh, Assam ...adesh the largest producer of ...ccounts for more than 57 per ...ion. Uttar Pradesh also is the ...regard to the output of seas-...ya Pradesh however, has the ...seed and holds second rank ...seed output.

...and and supply of edible oils ...shortfall in output as well as ...of increase in population and

A mustard field in Bihar

Gujarat being the main cotton growing state in the country, naturally has the biggest share in the cotton-seed output in the nation. Its share is nearly 25 per cent of India's total output followed by Punjab, and Maharashtra.

Although the output of oilseeds has gone up over the years, the rise in production did not match with the growth of population. This led to a decline in the per capita availability of edible oils. The per capita availability of edible oils during 1978-79 was 4.4 kg as compared to 4.5 kg during the previous year. This is far below the recommended level of 10.9 kg. The Union Agriculture Ministry is taking series of measures to offset the shortfall by introducing new package of of practices and incentives. The strategy is to raise the yield per hectare. The Ministry also proposes to bring command areas of Tungabhadra, Hirakud and Nagarjunasagar dams under summer groundnut crop. Special emphasis has also been laid on the extension of oilseeds, especially groundnut, rapeseed, sesamum and sunflower in the command areas of major irrigation projects in Andhra Pradesh, Karnataka, Orissa and Rajasthan.

Development of Oilseeds needed

It would not be wise on the part of the Government to concentrate on the development of a few traditional oilseeds, to bridge the gap between demand

[illegible] supply. The development of non-traditional sources of oil as well as the promotion of various types of minor oilseeds would be vital. To that end it would be appropriate to introduce a programme for increasing the cultivation of soyabean which contains 20 per cent oil. The use of soyabean oil in the vanaspati manufacture has gone up over the years. The requirements of this industry are being met mainly through imports. In 1978-79 India imported soyabean worth Rs. 302 crore. In order to curb the imports of soyabean the cultivation of crop has been taken up over an area of nearly 2 lakh hectares in Madhya Pradesh, Uttar Pradesh and Karnataka under another centrally sponsored scheme.

Sunflower is another important oil yielding crop in developed countries like USSR, Rumania, Turkey and Bulgaria. The yield per hectare and oil content of sunflower seed are higher than those of soyabean. It can be substituted for lathyrus in Madhya Pradesh.

Recent studies have shown that cottonseed oil is edible and has a good measure of protein content. In 1950-51 hardly any cottonseed was crushed in India. But since 1972 more cottonseed oil is being used in the manufacture of vanaspati. There are also good prospects for various other industries based on cottonseed like paper pulp.

Rice bran oil is a high grade oil with a composition approximating to that of gingely (sesamum) oil. It is claimed that by removing at least one per cent of the oil paddy by the existing methods of processing not less than 6.5 lakh tonnes of bran oil can be obtained besides two million tonnes of defalled bran. India has 60 such units with a processing capacity of 3.3 thousand tonnes of rice bran a day.

There are a large number of other minor oilseeds which are capable of yielding large quantities of oils for industrial and other uses including soap manufacturing, which, if fully exploited, would reduce the pressure on edible oils. These minor oilseeds include Mowha, Kusum, Karanja, Kapok, Sal, Neem, [illegible] etc. The current availability of oil from minor oilseeds is projected at around 2 million tonnes.

Research Projects

The gap between demand and supply of edible oils is widening as a result of shortfall in output as well as rise in demand because of increase in population and rise in real income. This calls for urgent action by the Central and State Governments to increase the production of oilseeds.

The ICAR has planned to set up ten new Centres for conducting research on oilseeds besides strengthening 18 of the existing 53 centres to improve the yield potential of groundnut, rapeseed, sunflower, niger, castor and linseed crops. A National Research Centre on groundnut has now been set up a Junagadh in Gujarat for intensifying research on groundnut crop. This centre would undertake fundamental research on cytological cytogenetics and other aspects of groundnut plant. Besides, evaluating the available gentic resources would also be taken. The centre would supply basic genetic material to breeding centres for evolving high yielding groundnut varieties suitable for various agro-climatic conditions.

Research would also be conducted for the improvement of rhizobium cultures which help groundnut plants fix atmospheric nitrogen into the oil. Studies on different repeseed and mustard crops is being intensified further under a project sponsored by the Department of Science and Technology. □

Turmeric Crop in Andhra Pradesh

J. Janardhan*

TURMERIC is one of the cash crops being cultivated in India since time immemorial. It is generally grown in tropical areas. It is a labour intensive crop. The operations, like plantation, weeding and harvesting require a large number of labourers. It is used as a condiment and dye stuff. It is also used as chemical testing agent for alkalies. It has various uses in Ayurvedic medicine. Hindu ladies use it on festive occasion. It is now being used by cosmetic industry also. Turmeric has started earning foreign exchange and within a short span of 12 years, its exports have increased four-fold from Rs. 217 lakh in 1965-66 to Rs. 830 lakh in 1977-78.

Turmeric is cultivated on irrigated land. The important states where tumeric is extensively grown are Andhra Pradesh, Tamil Nadu, Maharashtra, Orissa and Bihar. Andhra Pradesh produces 34 per cent of the total turmeric produced in the country. Turmeric crop is predominantly cultivated in Guntur, Krishna and Cuddapah districts in Andhra region and Nizamabad and Karimnagar districts in Telengana region. The yield per hectare is relatively high in Cuddapah district.

During the decade starting from 1968-69 the acreage under the crop moved upward from 15,620 hectares in 1968-69 to 25,694 hectares in 1970-71 and after that it moved downward from 22,115 hectares in 1971-72 to 14,074 hectares in 1976-77. The linear growth rate and compound growth rates of the area declined at the rate of the 1.34 per cent and 1.01 per cent per annum respectively.

The production of turmeric crop has come down to 35,000 tonnes after rising to 1,32,753 tonnes in 1970-71. Yield of the turmeric crop shows downward trend, excepting a sharp rise in 1970-71 and 1971-72, due to abnormal rise in price in 1970-71.

The downward trend in turmeric crop in Andhra Pradesh, is partly due to uncertainty of market price and partly due to increase in the cost of labour and inputs. To encourage the farmers, they should be paid remunerative price and stability in the price should be maintained. □

* Lecturer in Commerce, Giriraj Government College, Nizamabad

Thirty Years of Planning in Assam

Dr. Trishna Mahanta*

PLANNED development in Assam had its start in the year 1950-51 when the First Five Year Plan was launched. How much money has been invested during the three decades of planning? It is observed that the total amount of investment was Rs. 20.51 crore in the First Plan, Rs. 54.48 crore in the Second Plan, Rs. 132.44 crore in Third Plan, Rs 80.39 crore in the Three Annual Plans, Rs. 161 82 crore in the Fourth Plan and Rs. 486.72 crore (proposed) in the Fifth Plan. The grand total of investment thus comes upto Rs. 936.36 crore in thirty years period. This is not an insignificant amount and one would, of course, ask what has been the impact of this amount of investment on the economy of Assam? Did it fulfil the modest objectives of planning ? Did it help to transform the stagnant economy of Assam into dynamic and self-supporting one? These are vital questions for a backward state like Assam. To find the answers to such questions, one would have made a careful search of the achievements and failures of planning. An attempt to this end is made below.

For judging the achievements the two general yardsticks of economic growth i.e. the growth of State and per capital income might be adopted from a macro-economic viewpoint. They may not reflect actual economic growth but serve as rough indicators. In 1950-51 the total State income was Rs. 212.80 crore. It rose to Rs. 1,754 crore by the end of the Fifth Plan (in 1978-79). Apparently, the state income has increased by more than eight times. The real increase, however, has been much less. The rise in the price level has to be borne in mind. A similar picture emerges out of the growth of per capita income. In 1960-61, per capita income stood at Rs. 315.03 while in 1978-79 it rose to Rs. 961 Per capita income thus increased three times. This reflects growth in money terms only.

The growth of per capita income should raise the standard of living of the people residing in the State. There has been some rise in the standard of living of the upper middle class and the wealthy class. The poor and the under-privileged sections have rather experienced a downward trend because of sharply rising prices. Seventy per cent of the State's total population still lives below the poverty line. A meaningful growth of state and per capita income for these people would be possible when production increases substantially in the agricultural, industrial and other sectors.

*Professor, Cotton College, Gauhati.

Any talk of increased production in Assam primarily refers to the production in the agricultural sector. It being the primary industry of Assam, contributes 54.8 per cent (as in 1977-78) to the State's total income against the national contribution of less than 50 per cent. Of the total population, 91 per cent is in the rural areas and agriculure is the main source of livelihood for 75 to 85 per cent of the rural population. This shows how the economic growth of the State is heavily reliant on increased yield from agriculture. During three decades of planning agriculture has improved. For instance, during 1973-74 total food production was 22.06 lakh tons.

After 30 years of planning the real grouth in Assam has been comparatively less because of high price rise. Due to transport difficulties the goods and services cost more in Assam. The inflow of immigrants from outside has further intensified the problem.

It rose to 25 lakh tons in 1977-78. Paddy constitutes the principal foodgrain here. Its production was 14 31 lakh tons in 1950-51 which rose to 22 lakh tons in 1978-79. Of the total cultivable acreage, 72 per cent is utilised for the cultivation of paddy. Of it, only 6 per cent is utilised for the production of other food grains. Notwithstanding, production of paddy has not doubled all these years. Compared to paddy, production of wheat increased from 3 thousand tons in 1960-61 to 84.7 thousand tons in 1977-78. As far as the production of pulses and oil is concerned the production trend is unsatisfactory. Jute production has fluctuated widely, often showing sharp fall. From 1120.7 thousand bales in 1973-74 it has come down to 544.8 thousand bales in 1977-78. Production of cotton and sugarcane have remained static. It is to be mentioned here that the increase in agricultural production has been possible mainly due to extensive cultivation. This has reduced the proportion of forests to 27.6 per cent which is considerably below the national minimum of 33.3 per cent. The total cultivable land was 22.03 lakh hectares in 1950-51 and it increased to 31 lakh hectares in 1977-78. It is known to all that increased agricultural yield is possible only by increased and assured supply of inputs. During thirty years of planning, Assam has brought only 4.19 lakh hectares of land under irrigation. The utilization of other inputs is also inadequate. Progress of land reform measures have been very slow. Because of unusual growth of population and unabated inflow of infiltrators, per capita land available has been drastically reduced to 0.20 hectares.

As for the industrial sector, growth rate has been very slow. Industrialisation has just started there. Assam does not have large-scale industries except Tea and oil. Production of crude oil has increased to 5.5 million tons. Within a few years, Assam is expected to produce more than 7 million tons of crude. Production of tea has also increased from 157 thousand tons in 1960-61 to 266 thousand tons in 1974-75. As for the small scale industries, the total number registered stood at 7,562 units at the end of March, 1978. The forest-based and plywood industries are the only industries that are in a flourishing state. During the brief period of 1971—77, production in the registered factories have increased by 23 per cent (base 1970—100).

Of the tertiary sector, the transport and communication system has made some headway. The railways serve as the main communication system between Assam and the rest of India. 2,193 kilometres long railway line in Assam accounts for only 3 per cent of the total railways in India. There has been no additions to the total kilometreage in Assam since 1973. Assam has a meagre 105.22 kilometres of broad gauge line. However, the extension of the broad gauge line from Bongaigaon to Gauhati is progressing. The economic activities of the State depend mainly on the road system. About its progress, at the beginning of the planning era, undivided Assam had 6,284 kilometres of roads. Present Assam has got 20,683 kilometres of roads, of which 4,372 kms are surfaced and 16,311 kms unsurfaced. Many villages have been connected to the urban areas by buses; number of buses, trucks and other vehicles have increased; super-buses and night coaches for long distances have been introduced. The main towns have also been connected by air.

In the power sector, generation of electric power has increased very slowly. It is found that undivided Assam generated 5,280 KWH of electric power in 1956. By 1978-79, present Assam could generate about 658.25 million KWH. The State lags behind most of the States of India in respect of installed capacity although she possesses enough of potential for hydro electric power. Out of 21,995 villages, only 8,226 villages have been electrified. In percentage terms, it is 15 per cent.

Education, public health facilities have shown some progress. There has been an increase in the number of schools and colleges and in the enrolment of students. Medical, engineering and technical education has developed and expanded. Assam has now got three Universities. The number of State Dispensaries and hospitals has gone up from 34 in 1950 to 430 in 1974-75. Recently, some primary health centres have been opened in the rural areas.

Banking, Life Insurance facilities have been expanded. After nationalisation, banks' branches are coming up gradually in the small towns and semi-urban areas. A few rural banks have been started. This is welcome. But quite a significant part of bank-deposits is invested outside Assam. It has been estimated that on 31st March 1977, out of total bank deposits of Rs. 164.68 crore only Rs. 46.42 crore were invested in Assam and Rs. 83.75 crore were offered as advances. The rest went outside. To that extent, Assam has been deprived of investible funds.

The Failures of Planning

Certain factors have undermined the fruits of planning. Price rise in Assam is usually higher than the All India rise. If the rise in the price level is taken into account, the real growth rate becomes much less. Besides, growth rates of state and per capita incomes have been slower here as compared to the national rate. For instance, in 1970-71 the per capita income at constant prices was Rs. 538. It rose to Rs. 552.4 in 1977-78, that is the increase was only 2.6 per cent. As for the nation, the growth rate was 8.6 per cent during the same period. The factors responsible for the slow growth rates of state and per capita incomes are : the unusual growth rate of population (35 per cent against the national growth rate of 25 per cent), unrestricted inflow of foreigners for a long period, slow increase or fall in production in the mining and agricultural sectors etc.

The railways serve as the main communication system between Assam and the rest of India. About 2,193 kms. of railway line in Assam accounts for only 3 per cent of the total railways in India.

Agriculture is the main source of livelihood. But its yield has increased very slowly. The average yield per hectare here is one of the lowest in India. The yield rates also fluctuate widely due to climatic and other reasons. Cultivation is still practised with traditional techniques and modern inputs like irrigation, fertilizers, high yielding variety (HYV) seeds, insecticides etc. are yet to be extensively used. All these have added to the shortage of foodstuff. HYV seeds have been used in some areas, still food production has varied between 2 to 2.4 million tons. This amount is insufficient to meet the growing demand for food in the State. The shortage is filled up by importing about 2 lakh tons of paddy and wheat every year from the central pool. This erodes State exchequer considerably. Even then per capita (yearly) consumption of food stuff in Assam is 135 kgs. while it is 167 (in 1976-77) kgs for the rest of India. It is a pity that even after 30 years of planning, Assam could not achieve self-sufficiency in foodstuff. Rather its dependence on outside is progressively increasing. The experts are of the view that Assam can produce 30 lakh tons of paddy per year if the yield per hectare is increased to that of Punjab, Haryana or even West Bengal. This should be an eye opener to the planners of the State.

It is most deplorable that uptill now irrigation facilities have been provided to only 4.19 lakh hectares out of 23.71 lakh hectares of total cultivable land. Similarly, only 23 per cent of paddy land has been brought under HYV by 1977-78. Use of fertilizer per hectare is negligible. It is quite surprising that although flood damages 17 million worth of assets

annually no permanent measures have been adopted. Multiple cropping scheme has been adopted only recently. It should be borne in mind that the success of this scheme depends on a wide-spread scheme of irrigation facilities.

The backwardness of Assam in the industrial sector is well known. The small industries suffer from a lot of handicaps. Most of them depend on other parts of the country for raw materials, tools etc. Small scale industries of the rural areas produce limited quantities of goods. Weaving industry is the only exception. The State earns reasonable income from forest based industries and plywood factories. It has been exploited for a long time in respect of the two big industries, viz, the tea and oil. The price of crude oil has increased sharply in the international market since 1973, but Assam is getting royalty on it at a very low rate. Royalty at the rate of Rs. 42 per ton is a mockery on Assam oil. A memorandum has been submitted recently by the State Government to the Central Government for raising royalty to Rs. 315 per ton. The income from tea, derived in the form of taxes and duties contributes very little to the progress of the State. Of the total income, 86 per cent goes to the coffers of he Central Government although Assam accounts for about 54 per cent of the country's tea production. The State possesses the the highest per capita resources in the country but these have not been properly exploited so far.

It is also distressing that even after thirty years of planning Assam does not have a strong infrastructural base for rapid growth. It possesses only 3.9 per cent of the total railway route of the country. No route is electrified uptill now. Roads and air-ports are insufficient. Per capita consumption of electricity is only 34 KWH (according to the estimate of 1979-80) as against the national average of 110 KWH.

There has been quantitative increase of schools and colleges, but most of the primary schools are in a deplorable state. The village schools, dispensaries and drinking water facilities need to be improved. While Assam needs lots of funds, to provide better facilities in schools and colleges the State is known to have returned funds, allocated in the Plan, because of inability to spend money. This is something peculiar to Assam.

Real growth in Assam has been less because of comparatively higher rise of price level. It is due to transport difficulties that goods and services cost more there. The thirty years of planning shows more people unemployed and under-employed. The inflow of immigrants from outside has intensified the problem. For some years a convention has been followed that job carrying salaries upto Rs. 800 per month would be provided only to the local people. But this cannot solve the huge problem of unemployment. According to an estimate carried a few years ago, the total number of unemployed people is more than 15 lakhs, of which 11 lakhs are in the rural areas and 4 lakhs in the urban areas.

The discussion above shows some of the major successes and failures of Planning in Assam. So far as agricultural sector is concerned, it might be said that planning in Assam has not been real. That its resources have not been gainfully utilized is another indicator. When plan funds are returned because of inability to spend, this indicates poor plan-formulation and inefficient implementation. Perhaps planning in Assam is more official than practical. The coming Sixth Plan should be recast in the light of the these experiences. □

Local Materials for House Building

CERTAIN materials which are available in abundance in villages can be used for house building. The HUDCO shows the way for the utilisation. The houses constructed with the HUDCO's loan assistance in Karnataka, Kerala, Tamilnadu and Gujarat etc. are an example of the use of local materials. It provides an ideal solution to promote the use of local materials

In as many as nine out of ten houses, flooring has been done with the help of locally available earth with admixture of cow-dung and wheat straw. In some cases stabilising materials like molasses and locally available stones and pebbles have been used. In villages of Karnataka gravel flooring finished with cow-dung has been provided.

In construction of walls masonary has been done with laterite or other available stones. Instead of cement, mud or lime mortar has been extensively used. Small stone pieces which otherwise go waste are moulded in the form of blocks and used for masonary.

In areas where stones are not available, mud and sundried bricks have been used. In some cases soil blocks strengthened with cement lime, molasses and other agricultural wastes have been utilised. To encourage the use of country-burnt bricks in construction of walls in mud mortar, HUDCO has nitiated some schemes. It also provides a fillip to the local industry

To avoid the used of the expensive methods the HUDCO scheme utilises stone slabs, brick arches or jungle wood. In areas where these materials are not easily available, precasting is resorted to. The precasting is generally done at the village site and in cases where construction in nearby villages is in progress simultaneously, a central casting yard is developed.

The main material used are Mangalore or country tiles, jungle wood, pretreated bamboo, wooden rafters or reepers, bamboo matting, coconut trunks, etc. The roofing is done with stone supported on either the wooden raffers or the precast concrete joints. In some cases ACC/GCI/Asphaltic roofing sheets are also used.

To make the roofing materials like thatch, palmyra leaves fire proof, these are dried and dipped in a particular solution before using them to cover the jungle wood or bamboo framework. To enhance the durability of such roofing a spray coating of water proof material is done. In some cases the thatch is treated with mud-plaster mixed with bitumen.

To dispense with the expensive and scarce cement plastering, mud plastering is the cheapest alternative. To make this plastering water-proof bitumen and small quantities of kerosene and bee wax are added to the mud. The wall plastering with this treatment can last for four or five years. □

Livestock Potential of Jammu and Kashmir

G. M. Wani*

Goat rearing can have a real impact on the rural economy of J & K.

APPLICATION of modern agricultural machinery like tractors etc. has but a little value to a State like Jammu and Kashmir which abounds in hilly terrain, slopy valleys, high land pastures, rocky fallow lands etc. The animal are the main source of draught power in agricultural operation and rural transportation. However, there are a few pockets of plains in parts of Jammu division and certain areas of Kashmir valley. Therefore, animal husbandry, horticulture and fisheries in the form of a mixed farming are the only resourceful sectors of agriculture, which can have a real impact on the growth and development of rural economy in this strategic State.

Animals besides being main source of draught power (16 9 per cent of total cattle) provide essential foods like milk, meat, etc. and large quantities of animal by-products such as hides, bones, blood, guts and valuable organic manure The production of pashmina and other animal products like carpets, shawls and blankets of Kashmir, earn a handsome foreign exchange to the nation. Therefore, animal industry in this State has vast scope for judicious exploitation and quick economic returns. Let us consider a few aspects of its development.

Nature has provided an even distribution of various species of animals in different districts, for example goat distribution in Ladakh, Gurez, Karnah and Hills of Baramullah, some parts of Udumpore, Poonch and Raiouri districts is fairly related to the forests.

The second biological component influencing animal development and growth is the disease prevalence in that area. Certain disease foci are permanently habitating under certain eco-system, for instance, Liver-fluke disease (Fasioloiasis) of domesticated animals is most prevalent among marshy humid climatic conditions like place around Wular lake in Kashmir valley.

Sometimes a certain type of animal species may be better suited to a particular type of eco-system, sub-eco-system or region than the other. Inclusion or proliferation of other domestic animals in such situations is bound to prove hazardous to the whole society. Therefore, any animal husbandry development programme should essentially take into consideration these points.

Eco-Agro-System

On the basis of basic environmental norms viz temperature, rainfall and relative humidity, Jammu and Kashmir, State has been divided into various zones in the report of the National Commission on Agriculture (1966). Each zone has a specific livestock and/or cropping pattern. On the basis of these environmental variations the whole State can be divided into four district zones or regions with significant environmental variations and livestock patterns The strategy and planning for animal sector development needs an appraisal of these patterns before advocating new plans and proposals. This is necessary if synchronous development in whole of the State is desired. Thus cattle and sheep development programmes should mainly be stressed for Zone I, sheep and goat for Zone II, cattle and buffaloes in Zone III, and sheep and buffaloes in Zone IV. The State has about 64.4 per cent of its total area in the form of forests.

*Central Institute for Research on Goats (ICAR), Makhdoom, U.P.

The fallow lands and cultivable lands are about 5-6 per cent. Thus a mixed farming system with increased emphasis of pasture development, balanced animal husbandry and forestry ventures are necessary to bring about a substantial increase in the production of all these sectors.

Animal-Man Relationship

Animals are not related to men only because they provide highly nutritious foods like meat, milk etc. but they are an important component of this eco-biosphere. Any alteration in animal ratio may endanger human life. A number of genetic diseases known to be transmitted to man from animals is yet another factor which necessitates animal husbandry development programme in complete conformity with the existing eco-system.

Livestock Economics

Jammu and Kashmir has about 46 lakh human population (1972 census) and more or less the same number of domestic animals. This means for every human being there is one animal. This is perhaps the highest per capita score of animals throughout India. Yet the per capita availability of animal product is too less. It clearly indicates that we need adopt concrete production-oriented policies if economic benefits from livestock industry are to be achieved.

Socio-Cultural Attitudes

Kashmir is famous for carpets, blankets and embroidery works. All these and other cottage industries need wool and other animal products as raw materials. Here stress is needed to develop specific quality of commodity like carpet wool etc. to suit specific requirements. Likewise availability of milk and milk products is too insufficient to meet the existing needs. Dairy development in the State is essential to procure huge milk supplies available in the remotest rural areas, which have no proper means of communication and marketing facilities.

The lack of production oriented development policies in conformity with the socio-ecological factors necessary for these broad based development programmes is the main cause of present negative growth rate in the animal sector. There should be a proper cooperation between industry, technology and the development departments. One such lacunae in the cross breeding programme for fine wool production resulted in the negative attitude of the farmers for high yielding variety of wool because of the difficulty in spinning resulting into low local market facilities. This needs a foresight in generation of suitable technology well in advance.

Development and Planning Strategies

Jammu and Kashmir has varied geo-climatic and environmental situations. The development and innovation of any modern technology should match the existing production trends and utilization facilities. As such any amount of animal science research and resultant tecnological know how in tropical parts of India or other temperate-zones of world can not be applied to varied agro-climatic and ecological situations in Jammu and Kashmir State. Therefire, a proper and sound policy for research and development of this State is a must.

Conservation of Germplasm

Conservation of Germplasm and investigation on reproduction of all domestic species is of value to man.

Animal husbandry has vast scope for judicious exploitation and quick economic returns in J & K.

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This will ensure dissemination of superior germplasm to such lacking and border areas as Gurez and Karnah on one side and Poonch and Rajouri on the other side. These are the real pockets for animal sector development, but the present communication links are hampering in its way of substantial progress which can easily be combated by such technologies as frozen semen and zygote transfers. Cross-breeding is ideal for cattle, sheep and goats of this hill State. The high yielding exotic breeds can acclimatize to Kashmir and Ladakh divisions very easily. This State by virtue of its suitable climatic conditions can serve as a nucleus for the propagation of superior germplasm to the neighbouring States too.

The first step for the development of livestock industry in this State is reorganisation and reorientation of research and development schemes so as to generate such technologies which will economize livestock production and management to ensure higher production.

It has been observed that various cross-breeding operations with high yielding exotic breeds in tropical conditions have failed. For example in some of the mutton experimental programmes whole of the exotic sires have exhausted before any definitive conclusion could be made even under experimental conditions although their half breeds have better survivability under similar conditions. This suggests that if these animals are maintained in such agro-climatic conditions as in Kashmir and their semen transported to various neighbouring States, fruitful results could be obtained for propagation and transformation of exotic genetic materials. Instead of running scattered germplasm Centres in various Northern States at least it will be economical to set up a strong research and development centre for conservation of superior germplasm of various species in Kashmir. The initiative for such a huge establishment in the form of a national institute of animal reproduction should come from the ICAR. The establishment of such institute will inculcate a new spirit to the animal industry of whole India in general and Jammu and Kashmir in particular.

So far as environmental variations within its different regions is concerned, there are certain areas like Jammu which are as hot as any of the tropical regions of India on one hand, the subnormal temperatures of Ladakh and some parts of Kashmir valley on the other. This great source of variability can be better utilized to meet the requirements of whole India. For example, any experiment conducted in this State can be conveniently tested in different climatic situations within the State before recommending its use to whole of India. This will save considerable time and capital.

The buffalo population abounds in Jammu and cattle in Kashmir, whereas sheep and goats are the principal animal species of Ladakh, and some border districts of Kashmir and Jammu division. Moreover, there are certain rare species as pashmina goats and yak which need to be improvized by the use of modern technologies. Use of technology is a must for the uplift of any sector in modern times. Therefore, the first step for the development of livestock industry in this State is the reorganisation and reorientation of research and development schemes so as to generate such technologies which will economize livestock production and management to ensure higher production.

Some fields which need immediate action-oriented research programme are :

1. Conservation of germplasm of all domestic species :
2. Cross-breeding with exotic germplasm so as to evolve high yielding breeds, suitable for maximum milk, meat, wool and fibre production.
3. Use of controlled breeding practices like synchronisation and zygote transfer for higher animal production.
4. Generation of suitable methodology for preservation and judicious use of high land pastures.
5. Conservation of feed and fodder for winter months, including measures for migration of flock from temperate to tropical zones in winter and vice-versa in summer.
6. Use of fallow lands, cultivable waste and forest weeds (like herbs and shrubs) for animal feed and fodder.
7. Recycling of nitrogenous wastes like by-products of poultry, sericulture industries and forest waste for cattle and buffalo feeds.
8. Use of droppings from apple gardens for cattle feeds. According to horticulture directorate brochure 1976, about 5 lakh tonnes of apple dropping go waste annually in J&K. State ; this can be easily converted into a nutritious cattle feed. Moreover, by-products of Jam industries likely to come up in Kashmir needed to be tried for cattle feeds. This will mean establishment of cattle-feed plants using all these raw materials.
9. Development of sophisticated techniques to curb infertility/sub-fertility among domestic animals.

Unfortunately Jammu and Kashmir State has not received its due share of science and technology. This is evident from the fact that not a single production centre for any species has been established in this State. It is desirable that research and financing agencies like Indian Council of Agricultural Research, UGC, UDDB and world financing agencies like WHO, FAO should be approached to help the generation of research and development in the State. It is gratifying to note that the proposal for an agricultural university has already been finalized. Its establishment should be speeded up so that a concrete basis for research and development of animal, horticulture, fishery and forestery sectors of the State could be framed for an allround development. Such an endeavour will certainly raise the economic standards of a sizeable majority of small, marginal farmers, and backward classes of the State.

Delhi IIT's Achievements

R. R. Rao*

"OUR PEOPLE are looking up to science and echnology for the solution of their problems, or emoval of poverty, providing self-reliance for the ountry and security of its borders," said Prof. S. Narul Hasan, Vice-President of the Council of Scientific and ndustrial Research, in his convocation address at the ndian Institute of Technology, Delhi. Certainly the IT's programmes are successfully directed to achieving hese goals. Inaugurated on August 21, 1961, the nstitute has established a galaxy of interdisciplinary esearch centres to initiate research in various fields.

The highlight of the Institute's achievements this ear is the establishment of a two-way troposcatter ommunicaion link between the IIT and the Central lectronics Engineering Research Institute, Pilani. It the first of its kind in India and will benefit a number f departments like Defence, Civil Aviation, A.I.R., &T, and so on.

The IIT has addressed itself to developing methods better utilise the existing resources of energy and lternative sources and techniques to harness new sources of energy. A novel bioreactor employing immobilized microbial cells for rapid conversion of cellulosic nd sacharified substrates into ethanol, organic acids nd sugars has been developed. The reactor is capable of orking over 1800 hours without requiring incorporaon of any new cells to carry out the process. Fundaental studies on energy maximisation and organic id production in biogas systems also revealed signiant results including two and a half times additional ethane yield and increased methane and reduced rbon dioxide concentrations.

The Institute has been producing fuels from agricultral and forest wastes. A process has been evolved to t briquetted smokeless fuel from agricultural waste ond grass and forest waste like pine needles. A oject on gasification of sawdust yielding high calorific lue gas is in progress. Such innovations are suitable reduce the demand for coal in remote areas and crease dependence on the locally available forest and ricultural wastes.

From a conventional diesel engine a bio-gas operated gine pumpset which consumes about 0.45 to 0.5 bio-gas per horse power-hour has been developed. ne IIT has proved that biogas can be utilised for eting not only the lighting and cooking requirements rural areas, but also for generation of power, operan of refrigerators and water coolers, and for proling cold drinking water for the village. The echanical Engineering Department of the Institute, s developed a refrigerator which works on biogas d can easily substitute an ordinary refrigerator of e same size run on electricity.

* Our Assistant Editor.

The IIT has demonstrated that our automobiles can forget petrol/diesel and switch on to alcohol. Extensive research over the last 12 years has resulted in the development of an alcohol-operated automobile and scooter, without any major engine modifications. These alcohol-driven vehicles have improved engine performance, reduced consumption, and exhaust emmission. Alcohol which can be produced from agricultural waste, farm waste, industrial waste, molasses, tropical grasses and a hoard of other raw materials, can go a long way to provide a solution to the scarcity of fuel oil and growing air pollution due to vehicular exhaust emissions.

The Department of Civil Engineering has developed mathematical models for forecasting floods. These models have been used successfully in forecasting floods in the Yamuna and the Brahmaputra.

Diesel engine of five horse-power, being used for operating irrigation pumps has been modified to run on alcohol. The alcohol operated engines, pumpsets and generating sets operate with 6-8 per cent higher thermal efficiency. The Institute has investigated the possibility of using hydrogen as an alternative source of fuel and developed an engine which is operated on ammonia—a hydrogen carrier. Research is in progress for the "total hydrogen operation" of spark engines.

Considerable advances have been made in the field of solar energy. Flat plate collectors for water heating purposes have been developed by using a blackened galvanised iron sheet backed by a plain galvanised sheet, replacing the usual more expensive tubes fixed on a copper sheet. Work on small cabinet dryers of 5-50 Kg. capacity is in progress. In collaboration with the National Industrial Development Corporation, the Institute is working on a project to dry baggasse from sugar factories, quickly and efficiently. A unit of solar refrigeration, based on Ammonia water or Ammonia-sodium thio-cyanate system, producing 15 Kg. of ice per day has been developed and installed at the Institute. A two-stage double basin solar still which can produce 4 litres of distilled water from saline brackish water developed by the IIT goes a long way to provide potable water for all villages in our nation.

For heating and cooling of buildings, computer programmes for roof-pond system, trombe wall type of structures, water wall and solarium have been developed. A Green house with a moving shadow system and a roof still have been fabricated for simultaneously keeping the building cool and providing drinking water. Prof. M. S. Sodha, the leader of the group working on low-cost solar distillation system has been awarded the Hari Om Ashram Prerit Shri S. S. Bhatnagar

...earch Award for the year 1978, jointly with the ...tral Salt and Marine Chemicals Research Institute, ...avnagar.

...n collaboration with the French Laboratory in ...louse, the IIT has established a system to generate ...tricity directly from solar radiation at economically ...ble rates.

Another major field of study being undertaken at the ...Delhi is with regard to the cyclones, droughts and ...ds. The group working on atmospheric sciences has ...cessfully developed a storm surge model to stimulate ... 1977 Andhra cyclone which caused collosal damage ...human life and property. It is expected that this ...del can be used for operational purposes once the ...ails regarding the track of the cyclone, its maximum ...id speed and radius are provided by the satellite. ...e Department of Civil Engineering has developed ...thematical models for forecasting floods. These ...dels have been used successfully in forecasting floods ...the Yamuna and the Brahmaputra. They were used ...accurately stimulate the 1978 flood of the Yamuna, ...plan the spacing of embankments and to decide ...on the flood intensities for which the new bridges ...oss the Yamuna need to be designed.

The Rock and Soil Mechanics group has embarked ...on an extensive research programme with respect ...the stability of hill slopes, in the Himalayas, which ...ve been causing considerable damage by way of erosion, silting of reservoirs and initiating floods. India has launched an ambitious programme of off-shore oil exploration. It is necessary to substitute the present imported technology with indigenous knowhow. The research group on off-shore structures is investigating various types of hydro-dynamic forces including waves and their effect on the dynamic behaviour of structures being built in oceans for oil exploration.

The Institute is also trying to solve the problems of rural India. Two villages, one each in Haryana and U.P., were selected for initial study. So far they found out a number of sources like grass, agricultural waste products etc., which could be used to produce fibre and eventually create more employment. In addition to some of the devices already mentioned which are useful in alleviating the hardships of the villagers, the Institute has developed a pumpset which can pump twice the quantity of water being pumped.

In collaboration with the All India Institute of Medical Sciences they have produced an improved design of artificial leg, capable of a variety of movements including squatting, and sitting cross-legged without hand manipulation.

During the last 19 years of its existence, the Institute has been guided, among others, by two primary goals— pursuit of excellence for its own sake, and service to the nation. The Institute has been sincerely endeavouring to attain these goals.

Award for Yojana (Bengali)

President Sanjeeva Reddy giving away the Certificate of Merit to Shri B. L. Saha, Asst Editor, Yojana (Bengali) in the National Awards for Excellence in Printing and Designing.

STEP BY STEP

First Nucleus Industrial Complex

DR. CHARANJIT CHANANA, Union Minister for Industry laid the foundation stone of the country's first nucleus industrial complex at Goindwal in Amritsar on November 14. This concept of setting-up large and medium scale nucleus plants alongwith its connected ancillaries has been skillfully inter-woven into the programme of development of backward areas in the country.

Goindwal has been selected for starting the first nucleus complex because of enthusiastic response from more than 500 intending small industrial entrepreneurs from the region. In addition, a number of Central and State Public Sector Undertakings namely, Hindustan Machine Tools Ltd., Bharat Heavy Electricals Ltd., and Punjab State Industrial Development Corporation have already agreed to set up their nucleus plants at Goindwal.

To begin with, the nucleus plants at Goindwal will be set up by Hindustan Machine Tools Ltd., Bharat Heavy Electricals, Ltd., and the Punjab State Industrial Development Corporation Ltd.

Refined Cocoa Mass

THE Central Food Technological Research Institute (CFTRI), Mysore, has developed a process for production of refined cocoa mass from cocoa beans. Refined cocoa mass is a useful flavouring agent for ice-creams, cakes, confectionery etc. Small scale confectionery manufacturers will find this product highly useful for making various preparations. .

Being a new product, refined cocoa mass has good potential in the Indian market. At present powdered cocoa, which is more expensive is being used in the country. It requires imported machinery and is being produced in India by five firms, mainly from imported cocoa beans. It is estimated that there is an immediate annual demand of 100—150 tonnes of cocoa mass. It is expected to rise to 500-700 tonnes in a decade.

The cocoa mass produced in the laboratory has been tried in different preparations like ice-creams and cakes and found acceptable.

Electron Spin Resonance Spectrometer

THE Electronics Corporation of India Ltd., (ECIL), Hyderabad has started producing Electron Spin Resonance (ESR) Spectrometers. The first unit has been installed at the Vikram Sarabhai Space Centre, Trivandrum. Developed in collaboration with Osmania University, the know-how of the electromagnet, used in the spectrometer, has been provided by the Bhabha Atomic Research Centre.

The ESR spectroscopy has wide applications in the fields of chemistry, physics, biology and medicine. It is useful for detecting transition elements ions; electrons trapped in radiation damage sites; impurities in semiconductors, free radicals in both organic and inorganic compounds; and crystal structure studies.

In biological research it can be used for studying enzymes which involve free radicals as intermediary. In medical research the ESR signals can help detect cancer. In chemistry, it is useful for detecting free radicals and for investigating electronic structure of paramagnetic ions in different compounds. In the petroleum industry the unit can help detect minute quantities of vanadium which occurs as an impurity in crude oil. In radiation chemistry and polymer research it would be a tool for finding out the orientation of polymer chain and for studying reactions and decay of free radicals. □

Seepz Makes Steady Progress

THE SANTACRUZ Electronic Exports Processing Zone (SEEPZ), the only zone for electronic exports, completed six years of its existence in September, 1980. During this period the zone has been making steady progress. The number of units in operation has increased from 5 in 1974-75 to 33 in 1979-80 and the value of exports from Rs. 4.89 lakhs to Rs. 1114.15 lakhs. The number of those employed has been risen from 150 to 2,000.

The significance of export finance of SEEPZ can be realised when viewed in the context of the electronic exports of the country as a whole. As compared to 1978-79, exports from SEEPZ during 1979-80 registered an increase of 80 per cent, while exports for the country as a whole rose by 1.5 per cent.

FACT Makes profit

THE Fertilisers and Chemicals Travancore Ltd. (FACT), a Public Sector Undertaking made a net profit of Rs. 65 lakhs during 1979-80, the highest in 35 years.

According to the Chairman and Managing Director of the undertaking, Dr. P. K. Narayanaswamy, marked improvement in operations, industrial harmony and the new retention prices for fertilisers helped the FACT achieve encouraging results as reflected in its overall surplus of Rs. 1,228 lakhs as against Rs. 207 lakhs in the previous year.

The two divisions of the FACT at Cochin and Udyogmandal had achieved a record production of fertilisers during the year. Nitrogen production of 1,63,425 tonnes in 1979-80 was 9 per cent higher than the 1,49,978 tonnes production in the previous year. Similarly, production of 69,219 tonnes of phosphatic fertilisers showed an increase of 4 per cent over that of the previous year of 66,796 tonnes. The Udyogmandal unit produced 51,007 tonnes of nitrogen and 28,449 tonnes of phosphatic fertilisers, reaching the highest level of production attained by the 35-year old plant.

The undertaking proposed to diversify its activities by setting up a 50,000 tonnes caprolactum plant at Udyogmandal. The plant, estimated to cost Rs. 153 crores, could effectively stimulate economic recovery of the FACT which emerged out of a decade of continuous losses only in 1979-80.

The Prime Minister, Smt. Indira Gandhi, making inaugural calls to P & T Earth stations through satellite

Satellite Connection to Remote Areas

PRIME Minister Smt. Indira Gandhi made through satellite media, inaugural calls to P and T Earth Stations at Kavaratty, Car Nicobar, Port Blair, Aizwal and Leh on 15 November, 1980. Her inaugural speech was heard simultaneously by people who gathered in all these stations to witness the receipt of the calls. With this begins a new and far reaching phase in the domestic telecommunication service of our country.

Operation of the telecommunication services through the medium of satellite has two aspects, namely, external and domestic. For external telecommunications, India switched over to satellite medium early in 1971 via the Indian Ocean satellite of the International Telecommunication Satellite Organisation (INTELSAT).

Domestic satellite communication project provides for two main stations at New Delhi and Madras and five remote areas at Port Blair, Car Nicobar, Kavaratty, Leh and Aizwal. The scheme envisages working of the seven stations initially with the International Satellite leased from the INTELSAT and to ultimately merge the system with a bigger project, once the first INSAT—1A (Indian National Satellite) becomes operational by early 1982. The approved outlay for the seven stations for the INTELSAT Scheme is Rs. 5.42 crores.

Under the INSAT scheme, the project consists of the procurement of two multi-purpose national satellites (INSAT—1A and INSAT—1B) and establishment of 31 earth stations as also of a Meteorological Data Utilising Centre at Delhi. Besides providing for telecommunications and meteorological services, the satellite will serve TV distribution and direct TV receiver pay-loads too. The P and T ground segment covers 31 earth stations. The work of these stations is also progressing fast. With the completion of the INSAT Scheme, not only we will be able to provide reliable media to telecommunication all over the country, but will also usher in an era of dissemination of vital meteorological data like flood and cyclone warnings to all the areas which are likely to be affected by the floods/cyclones. □

The Export Challenge

(*Contd. from page* 3)

government also proposes to give priority in imports to items which would help in increasing our exports. A new EXIM Bank is to be set up shortly. There have also been suggestions to invite foreign collaboration in establishing export industries, but this will have to be decided in the light of long-term national interests. Through its new efforts the government is hopeful of achieving 10 per cent growth rate in exports as targeted.

The role of public sector in promoting exports deserves special emphasis. In 1978-79, its share in the country's total exports was 35 per cent which can be significantly increased by toning up the various units in the public sector.

On the whole, the exports depend on the overall performance of the economy, which has now taken a turn for the better. The responsibility of the leading banks, captains of industry, the labour leaders and the economic Ministries in jointly promoting exports should be recognised and executed in practice as in Japan. The general public should also give up the craze for 'phoren' goods and should even be prepared for austerity in the interests of developing our national economy. □

BOOKS

Approach to PR

Public Relations—A Scientific Approach by Baldeo Sahai, Standing Conference of Public Enterprises, Chandralok, 36 Janpath, New Delhi, pp. 336, Rs. 80.

BE it a government programme, a new product or even a service offered by an individual, its success today largely depends upon people's awareness of its advantages, and consequential acceptance. Public relations, therefore, has become an essential part of all human activities.

Western writers have written many books on public relations but there was none dealing comprehensively with the subject in the Indian socio-economic context. Mr. Baldeo Sahai's book fills up this vacuum.

Published by the Standing Committee of Public Enterprises, the illustrated, neatly printed and elegantly bound book in demy size carries 21 chapters in four parts, each part dealing with theory, practice, evaluation and specialised PR in areas such as government and industry. More than half the book is devoted to practising PR. exhaustively dealing with the effective use of various tools of communication like the spoken word, press, broadcasting and television, audio-visual media and traditional forms. Rich in experience of PR in government and both public and private sectors, the author writes with understanding and authority, and elucidates his points with examples drawn from real life. Undoubtedly, the book will prove a valuable companion to every student and practitioner of PR. Inclusion of check lists for some of the jobs one has to take care of in the course of PR, for example, arranging press conferences, setting up exhibitions, etc. would have enhanced its utility further.

Chapters on "Tools of Communication' and 'Past and Future PR' deal eruditely with the history of communication in the world and make stimulating and enlightening reading. Actually all through the book the author's insistance on PR men to view their tasks in a wider national perspective is discernible.

Shri Sahai has made an interesting suggestion. To encourage professionalism and ethical standards among PR practitioners, he says, they should be allowed to practise only after obtaining a prescribed licence as is the case with those who want to take up medicine or law as career. To obviate the chances of liaison men masquerading as 'PR men', the suggestion deserves a serious thought.

He finds PR in government 'utterly inadequate'. The government, he points out, functions at four levels. Panchayats, municipalities and corporations, State and the Centre. At the Panchayati Raj level, covering 80 per cent of population, there is no institutionalised arrangement for PR; it is negligible in local self-government; politicalised at state level and monopolised at the Centre who have taken too much on than they can efficiently handle, he says and offers practical suggestions to remedy the situation.

It has to be realized that in the modern milieu image-building of an organisation cannot be left to the PR men alone. Everybody in the organisation has to get involved in it at his level. As such not only PR men but administrators, executives, managers and all those concerned with influencing public attitudes have to keep themselves abreast with the latest PR technique. Going through the book will be well worth the trouble for them.

—H. N. Salvir

Urban Development

Urban Development in India: by B. Bhattacharya; Shree Publishing House, Delhi; 1979; P. 360; Price Rs. 110.

EVEN as the importance of rural development is gaining momentum, urban development—its process and implications, continues to hold its fort. This is not altogether surprising since urban population is quite significant in absolute terms. The book under review is a serious attempt to study systematically the process of urbanisation since the pre-historic times, though it is doubtful whether it is really the first of its kind in focussing on the issues that have been in the air for quite some time now.

The book is divided into five chapters, each dealing with urban development in different periods of time from the pre-historic times to the present century. One fact becomes quite clear in this study and that is most of the settlements, determined long time ago were related to their geographical conditions. Such a strong system of human settlements was considerable during the British rule when the human settlements were geared to the exploitative economy. The existing system is a legacy of the colonial past, giving importance to the British imposed pattern.

The book, though interesting does not deal sufficiently enough with post-independence period. One wishes the author had also studied to what extent our adoption of the British legacy has harmed the human settlements.

Apart from quite a number of printing mistakes which makes reading tedious at times (though they have been listed and corrected), the maps are not clearly read and are not suitably placed.

Despite the fact that much of the information given in the book is not new, it is still useful for many of the students concerned with urban development, as it presents the material in a sequential manner. The book is further enriched by a detailed bibliography and references.

—S. Asha

Development by Employment and Output

Structural Transformation and Economic Development by Atreyi Majumdar. Arnold Heinemann, New Delhi, 1980, pp. 125, Rs. 40.

THE study outlines the cardinal features and analyses the implications of the structural transformation away from agriculture both in terms of employment and output. The author has attempted a time series and cross-sectional analysis of structural transformation with a view to demonstrate the imperative need of effecting such a change.

The book consists of five chapters Chapter I concerns itself with the process of shifts of labour and

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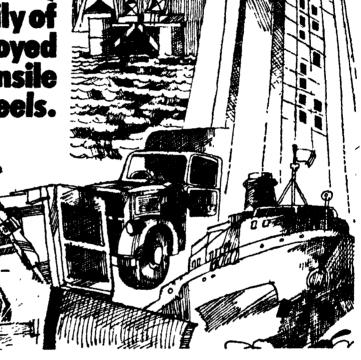
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capital from the agricultural sector to the industrial sector and their contribution to different sectors in the generation of national output and for its inter-sectoral distribution. Chapter 2 dwells upon the structure of output and employment in the developing countries. Chapter 3 throws light on the process of de-industrialisation, increasing dependence on agriculture and pauperisation of the economy in India during the British period and the causes of persistent primacy of agriculture in the total employment of the nation during the last two decades and its impact on agrarian productivity and on inter-sectoral inequality. Chapter 4 deals with the features of the stunted growth of the industrial sector and the causes of the lack of expansion of employment in the services sector and the pattern of migrant responsiveness to such a stagnation in this sector, and the economy, as a whole.

In the final chapter the author concludes that in terms of employment and output, structural transformation in favour of the industrial sector and subsequently in favour of services sector is the sine qua non of economic development.

The book throws open many issues which merit serious consideration in context of economic development. With empirical data packed into sixteen tables the book falls short of revealing the structural transformation.

—Keshav Dev Gaur

Economic Strategy for the Eighties

Economic Strategy for the Eighties by L. K. Jha, published by Allied Publishers Private Ltd., Pp. 152 ; Price Rs. 50.

ECONOMIC policy has led to a great deal of controversy among economists all over the world. Disagreements usually arise about the aims of policy, the importance to be attached to the various aims, the relevance of alternative theories in explaining the causes of policy problems and the appropriateness and the desirability of particular policy solutions. It has been often said even by dispassionate observers that our economic policies built on ideological considerations and economic assumptions are far removed from the realities of the Indian situation. For almost thirty years, we have been striving to design our economic policy and a planning procedure that are distinctly Indian but without much success. Various policy prescriptions have by and large, failed to deliver the goods. It is against this background that this much small but a remarkably incisive book, by a renowned economic administrator, has made a welcome addition to the existing literature on the subject.

The author, Shri L. K. Jha, needs no introduction to the Indian economists, administrators and policy makers. He has had a long and varied experience in the various economic ministries of Government of India. His recently published 'Economic Strategy for the 80s' is a precise and detailed description of a policy-cum-administrative programme for imparting greater efficiency to the development process, independently of basic or major structural changes of an economic or socio-economic nature.

Spread over 7 chapters, the book deals with some of the most important aspects of Indian economy, viz., the management machine, taxation inflation, employment and the role of technology. Shri Jha's thesis is that a considerable degree of government management of the economy is indispensable, but there is no reason why the direction or regulation of the development process by the Government should be allowed to become inefficient or self-defeating. Summarising the strength, Shri Jha observes : "At the heart of our developmental efforts is the objective of removing poverty...........It is only through higher production of the goods needed by the masses that mass poverty can be banished. It is not just the rate of growth but the content of growth which has to be attended to". He goes on to say : "At the heart of the 'economic strategy for the 80s', we must place the twin policies of maximising the availabiity of wage goods and generation of new job opportunities. This will sustain each other, strengthen the resource base......"

The policy prescription advocated by Shri Jha is refreshing and the book is in an easily understandable language and shows the deep practical insight of the author.

—J. N. Mongia

Attitude of Rural Leaders

Behavioural Dimensions of Rural Leaders. By B. C. Muthayya, K. Krishnamma Naidu and M. Aneesuddin Published by the National Institute of Rural Development, Hyderabad 1979, Pages 72, Price Rs. 20.

THE introduction of the three-tier model of Panchayati-raj in the late 1950's has generated a new dimension in the leadership pattern of rural development process. The book is the outcome of a study carried out objectively to assess the perceptions, nature and style of village leadership and their behavioural response to development in ten panchayats from Thanjavoor and Ramanathapuram districts of Tamil Nadu. The survey covered a total of 275 respondents consisting of 112 elected leaders, 81 informal leaders and 82 non-leaders.

The book has five chapters. A critical review of the available studies has been spelt out in the introductory chapter followed by objectives and methodology in the next one. The personal and socio-economic backgrounds of respondents are dealt in the third chapter which helps one to understand the behavioural dimensions of leaders in the light of their own involvement, economic and social status and so on.

In chapter 4 the authors attempt to focus on the attitudinal and behavioural dimensions of leadership which include functions of leaders, past leadership position they held, their approach and attitude towards panchayati-raj and rural development programmes and aspects like authoritarianism, fatalism, value orientation etc. Inter relationship between attitudinal and behavioural variables is also analysed which is a plus point in the study. It is revealed that the elected, informal and non-formal leaders have progressive approach in the problems and development of the villages. It is clear that leaders have been committed to bring about people's participation in the decision making process etc., but they have no concern about economic equality and social justice. The authoritarianism

has been less prevalent among elected leaders than among non-leaders. Conclusions and observations of the study form the fifth chapter.

The book has been brought out after sustained research and deep thinking. The authors have added a very useful book to the growing library on this important subject. It is a growing subject in a sense that the relationship between leadership and the growth process is at a controversy now. The trend is to look upon the contributions of leaders in the context of the evils of the society like corruption, favouritism, nepotism and so on. The only justification is that leadership at levels, have evils. So one cannot imagine that the leaders participating in the panchayati-raj bodies must be free from social evils. They are there. But nobody worries about them. The authors have also over-looked such issues while discussing the behavioural aspects of leaders.

The book is not only an useful addition to the existing knowledge in this sphere but also it can help in self-evaluating the perceptions, nature and style of functioning of rural leaders at large. In fact it is worth translating the book into some of the regional languages so that thousands of rural leaders can make use of it.

—C. Harichandran

Forest Management

Community Forestry Management for Rural Development : edited by R. N. Tewari and O. A. Mascarnehas of Xavier Institute, Jamshedpur and published by M/s. Natraj Publications, Dehra Dun 1980 ; pages 214 ; price Rs. 75.

IN India, there has been an increasing awareness recently that the progress of rural development would be inadequate without the inculcation of scientific management in areas having bearing on rural social life. Several governmental, semi-governmental and private bodies have started working in this direction. But due to the immensity of problems involved and lack of direct support between these organisations and the rural people there seems to be little visible impact, particularly on the forest-dwellers and the people living near forests. They have continued to suffer due to abject poverty conditions amidst vast rich natural resources.

The publication, which is indeed a valuable contribution on the vital subject of community forestry management (also called social forestry), reflects the collective thinking of social scientists, social workers, voluntary agencies, industrial houses, management, specialists and the professional foresters and government officials. This book presents select papers and proceedings of the second workshop on the subject, held under the aegis of the Xavier Institute, Jamshedpur in January, 1979 with assistance from Ford Foundation.

On the basis of four select case studies undertaken in the States of Bihar, Madhya Pradesh., Uttar Pradesh and Himachal Pradesh the publication attempts to take a broader perspective of the relevant issues, the major purpose being to collate, analyse and synthesise existing experiences of the social forestry schemes under implementation by the Government since 1976-77 and to arrive at an operational concept of the programme mainly through people's participation. The main focus has been to outline the basic features of the community forestry, to analyse the nature of experience and the factors that promote or hinder community forestry and to look for possible models and generalisations therefrom. As the data collected for the studies was restricted to small pilot areas chosen purposely, the results could at best be regarded as indicative and therefore not generalisable. The experience gathered would require to be enlarged to develop long-term project and programme planning. Nevertheless, these studies and the conclusions drawn would be useful for a more enlightened discussion for arriving at programmatic support to community forestry endeavour, which should ultimately become a people's programme—with people themselves taking a primary role to decide about its various aspects. Besides benefiting researches in social science, the publication would help decision makers and planners to formulate policies in a meaningful way.

—K. C. Bhatia

Light of Arunachal

Maharishi Ramana—His Relevance Today : edited by B. K. Ahluwalia and Shashi Ahluwalia : Vivek Publishing Co., Delhi ; Pages 136 ; Rs. 45.

THERE could not have been a more opportune moment than the birth centenary of Maharshi Ramana to bring out a collection of the observations and comments on tributes to the noble soul who conquered the ego in him at the young age of sixteen and found, after deep meditation, the secret of divine bliss. Anyone who carefully works his way through this book will find himself getting a glimpse of the reality within him, the godliness ingrained in him, covered up by mountains of piffle and sniffle of our modern existence. In turn, this will help him free himself from the fetters, imposed by none else than himself, in the quest for material well-being, and lead him slowly towards sublimation.

The editors of this book, B. K. Ahluwalia and Shashi Ahluwalia have taken paints to pick out the best tributes paid to Maharishi Ramana.

The book gets a flying start with an introduction by Prof. K. Swaminatham, a devout Ramana Bhakta. Dr. S. Radhakrishnan, G. C. Jung, Paul Brenton, Arthur Osborne. Dilip Kumar Roy, T.M.P. Mahadevan, Krishna Chaitanya, and Jaya Chamraja Wadiyar are some of the 30 authors whose contributions have been included in this collection.

—R. K. Murthi

Tribal Members of Thoovaipathy Cooperative Milk Society.

Tribal Co-operative Milk

FIRST ever assistance under SFDA scheme, to start a cooperative milk society in Veerapandi hamlet in Thoovaipathy village, about 32 km. from Coimbatore has benefitted 72 tribals in this area alone. Christened as Anaikatti Milk Producers' Cooperative Society Ltd., this covers three societies of Thoovaipathy, Anaikatti and Jambukundi tribal hamlets covering 172 members. Though there are 14 hamlets in the area with 4,000 tribals looking forward to such societies, a beginning was made on 30th August 1980 to start their society for the benefit of tribals who belong to Irular community.

Each member was given a subsidy of Rs. 1,000 and a loan Rs. 3,000 from Indian Overseas Bank for purchase of milch buffalo Now, proud with their prized possession, the tribal families are earning enough to repay the loan in instalments as well as augment their daily wages.

Pudukottai Yuvak Kendra

SINCE it's inception three years ago, Pudukottai Nehru Yuvak Kendra, has made progress in all it's youth and women welfare activities. Over 6000 Youths are on it's roll at present. There are 163 Youth Clubs affiliated to the Kendra, of which 16 are Mahila Mandals.

Over 3,600 illiterates of the rural areas have been taught to read and write, through the Adult Literacy Centres run by the Kendra. Through the schemes sponsored by agencies like SFDA, KVIC etc. the Nehru Kendra is carrying out various welfare measures for the unemployed rural Youth and Women of the Pudukkottai District. The Kendra is running 10 palm leaf centres, 20 tailoring centres and one pumpset repairing unit. Many youths are getting free training in the Pumpset repairing unit. Women are also given stipend for training in palm leaf and tailoring.

S. Subramanian,
Field Publicity Officer
Tiruchirapalli

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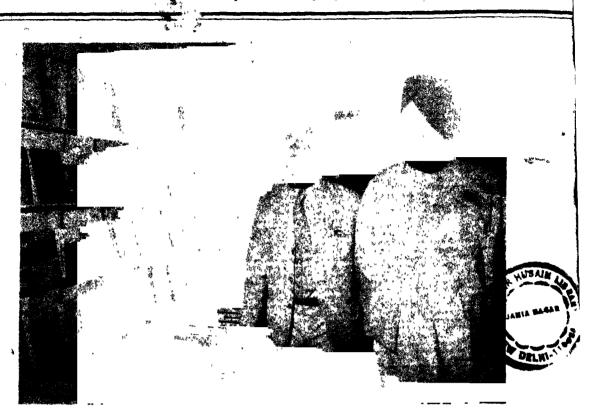
Punjab's Education Minister Shri Harcharan Singh Ajnala being taken round the book exhibition by Shri S. C. Bhatt, Director Publications Division. The book exhibition was organised by the Publications Division, Government of India.

Books Exhibition at Chandigarh

A BOOKS EXHIBITION organised by the Publications Division, Ministry of Information and Broadcasting was inaugurated by the Punjab's Education inister, Shri Harcharan Singh Ajnala at Chandigarh November 14, 1980. The Minister felt happy that e Division was doing good service by publishing usel books of great national significance in different dian languages.

Earlier, the Director of the Division, Shri S. C. Bhatt while welcoming the distinguished guests gave a brief history of the publications' programme of the Division. He also revealed the new scheme of providing employment to young boys and girls by appointing them as 'salesmen' on commission basis, who will sell books to the people at their door steps.

Bank Helps Cobblers

FIVE cobblers of Avarampalayam in Coimbatore district have sought the way to progress by approaching a nationalised bank for their inputs. Thanks to the efforts of local Sarvodaya Sangh they approached Indian Overseas Bank at Vivekanandapuram for a loan of Rs. 3,000 towards purchase of a stitching machine and other inputs. Kandasamy, Kittan, Venkittan, Maran and Kalan are the five cobblers who are now making chappals and shoes with modern designs. They are confident of repaying the loan and flourish in their business within a reasonable time. □

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